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TEACHERS COLLEGE RECORD

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MAX R. BRUNSTETTER, *Editor*

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VOL. 45 NO. 3 DECEMBER 1943

TEACHERS COLLEGE RECORD

Pre-Induction School Programs—Foreword

HOLLIS L. CASWELL

PROFESSOR OF EDUCATION, TEACHERS COLLEGE

THE certainty of military service at eighteen for the great majority of boys has introduced a new and powerful force in the education of youth. In the past, military demands have been far removed from consideration in developing the high school program. This was appropriate under conditions preceding the war. But now, when we know without doubt that most boys will experience military service, a new set of demands is placed on their education. For the welfare of the individual boy this change needs to be taken into account in planning his education for the period immediately preceding his entrance to military training.

During the war emergency, there is another side to the matter. We entered the war poorly prepared as a nation to prosecute it. It has been and is total war. Every agency of our society, civilian as well as military, has had to exert its full effort to support and advance the war effort. In the training of men to meet the requirements of military service, there has been no exception. The Army and Navy faced a gigantic problem of training millions of men for general military effectiveness and for service in hundreds of specialized jobs. It was made clear that civilian schools could do much to speed this training. As a result, pre-induction programs were recommended.

Thousands of schools throughout the nation are now providing various types of opportunities designed to prepare their boys to enter military life and to carry on their military training with greater effectiveness than otherwise would be the case. Without doubt, schools are rendering a very important national service in this area. However, the necessity for rapid development of

such work, the lack of any overall, general analysis of the problem upon which the individual school could base its program, the sometimes conflicting advice from different branches of the armed services, and other factors have made it necessary for local school systems to develop their programs with large reliance on their own planning and resources. In spite of these limiting factors, most schools have established valuable training opportunities.

This issue of TEACHERS COLLEGE RECORD presents accounts of educational programs in a selected group of schools which are making unusually significant adjustments to the fact that their older students soon will be entering military service.

Pre-induction training in a number of fields and in various types of high schools is described. An account is given of wartime adaptations in the field of English in the Weequahic and other New Jersey high schools; of health education in the Sequoia Union High School, Redwood City, California; of the guidance program in Fort Smith, Arkansas; of the intensified work in radio, automotive mechanics, etc., in the high schools of Detroit; of mathematics in the schools of New Jersey; of social studies in the Cleveland High Schools; and of the organization and administration of local pre-induction programs in Pennsylvania. The small rural high school is represented by an account from the Comer, Georgia, High School of its curriculum adjustments to wartime needs.

One point in particular should be kept in mind in reading these accounts. It is not implied that the procedures described cover the full range of desirable methods of providing pre-induction opportunities. There are many good ways to meet these needs. Also, it should be recognized that views will differ regarding the desirability of many educational procedures. Rather, these accounts show how some schools which have given special study to the problem are meeting the situation presented by the fact of military service for American youth. They are outstanding efforts, but even so, are presented as only suggestive.

It will be observed that no accounts are included from vocational schools. This is not because vocational schools are not making a contribution to preparing men for service in the armed forces. They are, in fact, making a major contribution. Rather, such material was not included because the regular program of vocational schools relates very closely to Army needs for occupational specialization. Adjustments required are relatively minor ones within courses already in operation.

The point at which pre-induction work differs most widely is probably in connection with the scope of activities considered to have pre-induction value. Some schools have limited pre-induction opportunities quite closely to pre-vocational courses in fields such as electricity and machines. Others have given attention to all aspects of the development of students and have made adjustments at whatever points are indicated. Quite as great concern is

felt for the attitude the boy has toward military service and his knowledge of induction processes as for his knowledge of electricity and the like. The broader programs appear far more sound from an educational view.

Just what the long-range significance of pre-induction education may be is not clear at this time. It is possible, of course, that all such work may be dropped just as soon as hostilities cease. Another possibility, however, must also be considered. Should compulsory military training be continued after the close of the war—an eventuality which appears highly possible—the certainty of military service for youth will be present in peace as well as in war. This would have to be taken into account by schools. The urgency of assisting the armed forces in their training program would not then be present, as it now is, but the effect upon the life of the boy would be there just the same. If we really believe in the continuity of education, we could not ignore the inevitable influence on sixteen- and seventeen-year-old boys of a certain period of military training for one or two years after eighteen.

Thus, pre-induction work may well be studied with an eye to the future as well as the present. We should be analyzing with great care our present experiences and determining a sound educational policy for the future.

Pre-Induction Work in English*

MAX J. HERZBERG

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LIKE all teachers, English teachers have a fervid desire to do everything possible to help America win the war. There are, however, two attitudes regarding the help that can be given. One group wishes to turn English directly into service, with classroom procedures so adjusted that they contribute immediately to an understanding of and participation in war activities. The other group believes that the ends can best be served by keeping all sound and sight of the war out of the classroom. Personally I believe that the second group is unrealistic, and is likely to make young people feel that those who belong to it are far removed from life. Actually, their attitude is largely hypothetical, and their ivory tower has long since been bombed.

ACTIVITIES SERVING WAR AIMS

Those who seek to be directly helpful have discovered many ways in which they can serve in the winning of the war. What seems to me most striking is the fact that, in many instances, procedures are involved that seem natural to English teaching rather than foreign to it. Many are activities that we have all engaged in, even if not so intensively perhaps as we do today under the pressure of events. Others are activities in which we should have engaged had not the dead hand of tradition stayed us.

Below are listed some of these activities, and in describing them and estimating their effectiveness I have made use of outlines of work being done in a number of New Jersey schools at which I recently made inquiry.

First, English teachers must still further develop *reading skills*. In view of recent Army and Navy reports it seems likely that more stress must be laid on one work type of reading: understanding directions. It is obvious, too, that an efficient combination of speed and understanding in reading is a military asset. Naturally, as they work in this field English teachers will keep in mind the results of many searching investigations that have been made into the problems of reading; and

*Thanks are gratefully extended to the following for help in the preparation of this article: William F. Bauer, East Orange High School; Jules Bernstein and William Lewin, Weequahic High School, Newark; Jessie Boutillier, Central High School, Newark; Leon C. Hood, Clifford J. Scott High School, East Orange; John F. McSharry, West Side High School, Newark; and Edward J. Rutan, Millville High School.

they will particularly remember the close connection between reading ability and general intelligence and between reading ability and socio-economic status. If testing seems desirable, teachers will consider the fact that practice in taking tests is useful to the prospective inductee; he will need to give an accurate account of himself in the important tests he takes when he is inducted.

Second, English teachers must become more conscious of *listening skills*. The development of the radio, today the chief source of information and entertainment for our young people, was making this an obvious necessity even before the war. It is still more necessary at this time, when the radio has become our anxious listening post all over the world. Such listening skills carry over of course into other fields than radio—intelligent listening to the discussion that is part of the democratic process and alert listening to directions, among others. In developing listening skills, use should be made of the large number of transcriptions that are now available.

Third, special emphasis must be placed on *clear, correct, and concise oral and written expression*. For generations and indeed for centuries teachers of the language arts, arts which include a range of expression as wide and deep as the human mind itself, have developed many ingenious instructional techniques: in straight narration and exposition, in outline and arrangement of material, in forensics and dramatics, in letter writing, in many other special fields. English teachers will employ these valuable techniques today, as they have often done in the past, with topics related to current wartime activities and problems. This becomes a direct contribution to pre-induction training, because of the importance attached to straightforward, accurate, and concise expression in military life. Obviously there are equal values for those students who will remain in civilian life, helping in the total war program.

Fourth, *vocabulary study* is implicit in all these stimuli to expression. To some extent this will involve the study of words common to military usage, since familiarity with these terms will help ease the adjustment the boy makes when he enters military service. But more generally, it will stress intelligent methods of discovering meanings, through dictionary study and in other ways. It will deal with the marvelous rejuvenation of language that war always carries in its train—new words, odd phrases, striking expressions, natural and spontaneous figures of speech.

Fifth, we must insist on an understanding of that *literature* which helps young Americans to realize the great goods for which America is fighting, and which promotes an appreciation of the diverse elements in our own society and of the peoples of the world. Much must be made, therefore, of the rich and inspiring literature of American patriotism and idealism. All the classics ordinarily studied in our schools must be given fresh and forceful interpretations in the light of current happenings. Thus *Julius Caesar* may be seen as a

picture of fascism, *Silas Marner* viewed as a case study in xenophobia, *Snowbound* studied as a brilliant and enticing picture of American agronomy. Yet at the same time the eternal values present in the world's great writers must be set forth as the heritage of all civilized men. The writings of our Allies, particularly in Latin America, need to be brought increasingly to the attention of our students. Nor should teachers fail to make clear that even in the older literary products of nations now at war with us may be found noble ideals to which in time they will turn again, and that many of their refugee writers now on our shores continue to express these ideals. Reading lists of the many new non-fiction books of experiences on land and sea and in the air and of comment on the world situation should be prepared, in conjunction with librarians, to give future citizens and soldiers informed, intelligent viewpoints. Stress should be laid on postwar discussions.

Finally, it is obvious that in all these varied activities English teaching is drawing closer not merely to the pulsating and dynamic world outside the school doors, but within the walls of the school itself it is finding kinship to other subjects in the curriculum, is becoming a part of the school as a whole. Here it becomes clear, first, that the union with the social studies is especially intimate; and that is perhaps only another way of saying that English is laying, as every single school activity should, a strong stress on citizenship. In reports that have come to me English teachers say, for example, that they found certain sections not scheduled for any kind of social studies work, and that they therefore felt obligated to spend some time on current events and the discussion of present-day problems. There was no loss: deeply interested students develop the power of expressing themselves in dealing with such subject matter even more readily than with other types of "composition" material.

UNITS IN PRE-INDUCTION ENGLISH

By way of specific illustration of procedures and methods, I shall quote directly from the experiences of two schools.

From Edward J. Rutan at the Millville, N. J., Memorial High School comes the following unit.

Aviation Unit in An English Classroom

Since high school students are "air-minded," the problem for the teacher of English is how to improve their use of English through their interest in aviation. In addition to refining and extending their knowledge of aviation and improving their skill in reading, writing, speaking, and listening, they will also at the same time be receiving worth-while pre-induction training.

Consequently, the following outline is offered as a series of suggestions which can be of help in obtaining an understanding and an appreciation of the relation of aviation to life through English as a means of communication. Thus a class should not merely be concerned with explaining clearly why an airfoil can glide, but also with the effects the application of that principle has had, is having, and may have on people.

I. INTRODUCTION

A. General Discussion Questions

1. Is air power merely pilots and planes, or is it an attitude of mind?
2. What may be the consequences if aviation is not considered in relation to the other aspects of our social order?
3. What part is youth playing in aviation today?
4. What place in aviation will youth take in the postwar world?

B. General Exercises for Interpretation

1. Explain: The shape of things to come is in the air.
2. Give your interpretation of these lines by Stephen Spender:

"Thinkers and airmen—all such
Friends and pilots upon the edge
Of the skies of the future—much
You require a bullet's eye of courage
To fly through this age."

II. ACTIVITIES

A. Vocabulary and Word Study

1. Learn the meaning, pronunciation, and spelling of such key terms as aviation, airfoil, aeronautics, aerodynamics, aileron, fuselage, etc.
2. Be able to distinguish between the technical and general definitions of such words as drag, lift, spar, strut, thrust, weight, etc.
3. Compile lists of the "slanguage" of aviation, or prepare a picture pocket-dictionary of aviation.
4. See if you can find what the different senses of meaning of the word "air" are.
5. Point out the difference in what is being said in these pairs of statements:
   a. Their ceiling is low.
   b. The ceiling is zero.
   a. Has he contacted him yet?
   b. Has he said, "Contact," yet?
   a. Locate the plane's center of gravity.
   b. The pilot saw the gravity of the situation.

B. Speaking and Listening

1. Make a model airplane and describe or demonstrate to the class just how you put it together.
2. Tell the class about a movie you have seen, or a radio program you have heard, or a book or an article you have read that concerns some phase of aviation.
3. Explain the advantages of one type of plane over another, but try to keep them in their classes, as, fighters, bombers, transports, etc.
4. Show how Sikorsky is indebted to DaVinci and others with regard to his experiments with the helicopter.
5. Give a talk on how aircraft has changed our way of life, including a discussion of how it may change our future.

   (NOTE: Students should be required to take notes on all reports given in class.)

C. Reading and Writing

1. Prepare written reports on books, fiction or non-fiction, dealing with aviation.
2. Build an aviation bibliography as a useful reference for reading in general and also for use in preparing topics.
3. Make an aviation scrapbook, using up-to-date news clippings, magazines, pamphlets, etc., or illustrate by your own drawings, sketches, etc.
4. Help maintain an up-to-date classroom aviation shelf by bringing in all literature pertaining to aviation.
5. Choose any of the following topics to write about:

a. How to get in the Air Forces.
b. What contributions aviation is making to the war effort and may make to the peace.
c. A biography of a famous aviator or aviatrix.
d. An original drama (play, movie story, radio drama), story, song poem, etc., dealing with some phase of aviation.
e. How air speed reduces pressure or why an airplane flies.
f. How to identify the various aircraft.
g. What the aircraft of the future may be.
h. The art of flying or the science of aviation.

Jules Bernstein, at the Weequahic High School in Newark, employed the following methods in a course in pre-induction English.

Procedures in Pre-Induction English

The adaptation of the English curriculum in Weequahic High School to the needs of a pre-induction program necessitated an overhauling of the entire course of study in the final term. Normally, the course is largely devoted to readings in American, World, and Modern English literature; with the parallel requirement of a two-thousand-word minimum essay, including footnotes and bibliography, on some phase of American literature. Obviously, this subject matter, valuable and valid though it is, would hardly suit the needs of either the Army or a boy who is about to enter it.

I came to realize early that, to begin with, pre-induction work in English cannot help trespassing on territory sacred to other departments. Second, much of it would in fact have little to do with English or any other field in the high school. Third, much of the work was bound to be little more than intensified training in formal English along lines adapted to the needs of the military life.

Further, the term's work was divided into two general lines: Orientation and Training. I cannot say which is more important, but the students seemed to feel that the latter was more valuable to them, probably because its results were measurable and definite. Nevertheless, in what follows more space is devoted to the former, as a less customary item in English teaching.

Orientation

There is a wealth of material which can aid the teacher who wishes to adjust his students' state of mind to a war or Army world. Much of it is standard military writing or training material: The *Soldier's Handbook* and the *Bluejacket's Manual* are prime examples. However, a number of publications like *Our Armed Forces*, *So He's in the Navy*, or *The Army-Navy Guide* are also most helpful, as are the books by men like Kahn, Hargrove, and Gaddis, who write delightful (or at least exciting) personal, humorous, and highly informative sketches from the soldier's point of view. The issues of the *Infantry Journal*, most literary of military periodicals, also afford excellent material.

We started our work in orientation with a discussion and explanation of the Selective Service system, its function and procedures. Naturally, preparation for the draft and the whole system of induction, classification, placement, and training were the subjects of succeeding discourses. To help in this work, the draft board of our district gave us enough copies of *The Army and You*, a government publication, for each boy to receive and keep one. The pamphlet is excellent and should be in every boy's hands.

We then turned to the Army's own manual, *The Soldier's Handbook*. Individual reports were made on the responsi-

bilities of a soldier, military courtesy, restricted information, the Army organization (from squad to division), ranks and insignia, and soldiers' prerogatives, if any. We followed the same procedure with the Navy manual.

The next step in orientation was the adjustment of the highly individualistic student mind to the regimentation of Army life and the military regulations. The giving and receiving of orders were studied on a technical basis: organization of an order when issued or received, and the prime rule of "Never take or give an order unless you understand what is to be done" was emphasized. "Don't be afraid to ask questions" provided meat for a day's work. We even determined that an order comprising more than seven units is almost impossible to remember, while five parts is a merciful number. The classes wrote specimen orders by way of illustration.

Students were further impressed with the disciplinary rigidity of Army regimentation. The give and take of schoolroom discourse was contrasted with the arbitrary nature of Army assignments and instructions. Students discussed officer-soldier relationships and the necessity for maintaining corps discipline.

Soldiers must use Army language, and the sooner certain terms are learned, the easier the transition into Army life, and the fewer questions the inductee will have to ask later on. Every potential soldier learned such terms or expressions as: *G.I.*, *C.O.*, *chow*, *fatigues*, *small arms*, etc. For the Navy, we had *bulkhead*, *port*, *deck*, *sick bay*, etc. A number of specimens of more polite military slang taken from Bennett Cerf's *Pocket Book of War Humor* were then added. Finally, the members of the class compiled a list of two hundred war words which they were encountering in the newspapers and magazines. (Similar lists have recently appeared in the magazine *Word Study*.) The words were studied and learned for definition and spelling. They ranged from *enfilade* and *echelon* to *bridgehead* and *foxhole* (that somewhat misunderstood term).

Another phase of the orientation program was the teaching of the parts and types of Army General Classification Tests and how to take them. Students were impressed with the importance of all Army testing, and they were shown how, by good scores, they might receive ratings which would enable them to be eligible for invaluable vocational training or advanced schooling.

A study of the branches of Service was next on the list. We had individual fifteen-minute reports on Army, Navy, and Marine services. Topics included:

Submarines
Jungle Warfare
The Seabees
Marine Aviation
Naval Cadets
Naval Aviation
The Artillery
The Signal Corps
Chemical Warfare
Destroyer Life
Paratroops
Tanks
Tank Destroying
Intelligence
and Others

There are individual books which give full information on each of these branches, but in the course we used *Happy Landings* for developing air-mindedness. The book was successful, though it reflects students' attitudes significantly that the boys objected to one story as childish in its sentimental appeal and to the fact that few technical data were included.

The final part of the orientation came with a bold foray into the social sciences. Each boy prepared and wrote a long paper on one of "Our Fighting Allies" and its stake in the war. All these papers had to go beyond a mere account of geographical, sociological, ethnic, political, and economic characteristics into the phase of the war that concerned that nation most. The latter part of the paper also included a section on that nation's place in the postwar world. It would

seem that a fighting man ought to have a clear-cut idea of what all the fighting is about, and of what is to be done with the victory that we are attaining.

Training

The second division of work in the course I have called Training. Here we intensified the work in fundamentals, most of them English.

To begin with, students were taught to read. The "jump-eye" method for speeding up reading rates was employed with considerable success. Then we concentrated on reading for comprehension by timed reading selections and précis. In the précis, emphasis was laid on exact choice of words. It was in reading and in written expression that the greatest English deficiency was encountered.

Since the Navy V-12 tests place great emphasis on vocabulary training, vocabulary and word-mastery units were taught to the boys, using words that were not military. As a final test, the Clapp-Young vocabulary test was administered, and no one in the group tested rated lower than twelfth grade level, upper half.

The boys' inability to put their thoughts clearly in their précis writing focused my attention on composition work. A soldier must learn to describe and relate any object, circumstance, or event. Short compositions were written under time pressure. A boy was placed on a chair before the group; the others were given one and a half minutes to observe him, and then seven minutes were allowed for the written description. A staged fight was also written up, as was the landscape seen through the window of the classroom, or the events of the previous day. To these relatively formal exercises were added letters: to soldiers, V-mail, and *tour de force* letters to the folks back home. The boys did plenty of writing, and I think that they enjoyed writing and reading training most highly.

Closely associated with the work in reading was our problem-comprehension work. Part of the Army General Classification Test is made up of arithmetic problems in story form. Many boys did the work incorrectly because of failure to read carefully. Stress was laid upon slow reading and complete understanding of the solution to be worked for before any attempt at solving the problem was made.

Curiously, I got myself into the job of an arithmetic teacher before I completed this last unit. I found to my dismay that these boys, as a group, were ignorant of the common procedures of fraction inversion and similar elementary school arithmetic methods. Faced with the difficulty of trying to teach story problems in arithmetic to students with a deficiency in both arithmetic and English, I simply buckled down and taught both. It wasn't difficult; in fact, it was interesting, although time-consuming.

The last unit of study in the written English field was a unit in spelling.

My description thus far has indicated a great number of opportunities for oral English. Most reports were made before the group, and numerous discussions were conducted by a student chairman with universal participation. Clear speaking, articulation, and adequate volume were always watched for, and the boys were encouraged in the use of diagrams and pictures in all their expository talks. Every boy stood before the group as a formal speaker at least twice.

As might be expected, the course was not welcomed by all the students. Certain youngsters who were under seventeen and had collegiate aspirations resented the fact that the literary background of the course was reduced to an absolute minimum; they feared that they would suffer from a lack of information when given placement tests in college. Happily, this has not proved to be the case at all. I have received no complaints, and two

of these pre-induction students ranked second in English placement tests at the colleges of their choice. From one boy, now in service, I received one amusing suggestion—that we familiarize boys with some of the simpler oaths, so that they might be better conditioned when they first encountered the mighty objurgations of their first top-sergeant!

The other objection I heard was to the effect that the segregation of boys was an unaccustomed classroom situation. In this, I think they have a point; the girls must live in a war world as well as the boys, and the formal training given the boys would have been of value to the girls also.

These illustrative units make clear what opportunities the emergency affords. It may be asked: What steps shall be followed in organizing one's thinking and reorganizing a course of study in terms of these new demands? This reply may be made:

1. Recognize the fact that there is relativity in subject matter, and that in an emergency such as the present it becomes necessary to decide what can be dropped (perhaps temporarily), what can be treated in less time, and what must be added.

2. Recognize in the field of English certain pressing and critical needs of the Armed Forces, of war industry, and of the home front: clear and concise expression, reading and listening intelligently, writing letters in good form and of the right *ésprit*, knowing the background of the war and feeling inspiration in American ideals, sound morale, enlisting all our activities in attaining complete victory. Nobody can be excused from these important war tasks.

3. Recognize, therefore, the need of rebuilding our composition and literature courses; and recognize too the fact that if this is done wholeheartedly and wisely, it will not "spoil" English. Rather it will make it tremendously more vital and dynamic, a realistic and admired force in the lives of young people. The lessons to be learned in such a reorganization may well be carried into the critical days of peace.

Pre-Induction Training in the Social Studies

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IMMEDIATELY after the attack on Pearl Harbor, the Social Studies Department of the Cleveland Public Schools, as was true in many other communities, re-examined its courses of study to consider changes which were desirable as a result of the fact that our country was engaged in war. The existing courses were redirected by eliminating some material and by adding new topics. Moreover, a new course was introduced, usually in the twelfth grade, on problems of war and peace. In some high schools this was a full-credit course for a semester (10 points according to our plan), including much out-of-class preparation; in other schools it was given for one semester on a reduced credit plan (5 points), without requiring much preparation outside of class time. The reduced credit plan permitted pupils to take the course without dropping the program of studies they had begun.

The redirection of existing courses and the organization of the course on problems of war and peace were made on the basis of these assumptions:

1. Wartime citizenship studies are essential to winning the war and the peace to follow. The will to victory —morale—is as essential to victory as are the machines of war. Either is futile without the other. The will to victory, in a democracy, is based upon understanding of backgrounds, issues, purposes, principles, and ideals, and upon a reasonable hope for the future.

2. The social studies program must be flexible at all times and the critical times of war require that important changes be undertaken.

3. Many of the concepts and principles developed through a good social studies program are valid at all times, whether the country is at war or at peace, whether it is prosperous or depressed. Our young people will spend most of their lives in the postwar world. Long-range values, therefore should not be neglected.

4. The study of wartime and postwar problems must use available facts but it must also go beyond those facts to discover enduring principles and values.

As more young men left the high schools for the armed forces and when it became evident that the draft age would be reduced to eighteen, more attention was given to preparing sixteen- to eighteen-year-olds for induction. Information from the Army and Navy regarding the needs of the men and women of the armed forces was assembled and the post-induction train-

ing program was studied to discover what could be done to facilitate the transition from civilian to military life. New, brief outlines for pre-induction training in the field of social studies were prepared in the fall of 1942, and books, pamphlets, and visual aids were selected and radio programs were prepared for broadcast over our school radio station, WBOE. Teachers are constantly modifying their outlines as additional information and ideas are assembled and as experience seems to justify. The pre-induction training program in social studies in the Cleveland schools now follows relatively closely the statements of needs made by the Civilian Pre-Induction Training Branch of the War Department.[1]

Any pre-induction training program which is instituted in the schools is to be done voluntarily by the regularly constituted civilian educational authorities; neither the War Department nor the Office of Education wishes to impose courses. The responsibility for the development of a pre-induction training program in any school system rests with the local school authorities and teachers, taking into account the needs of the armed forces, the needs of the students, and the available educational resources.

The Army has classified its needs, which can be met at least partially by instruction prior to induction, into two main types: (1) specialized needs for various occupational and trade skills, and (2) needs common to all soldiers. The common needs have been further subdivided into five major areas:

1. Understanding the background, conduct, and issues of the war.
2. Understanding the nature of military life.
3. Physical, mental, and emotional fitness.
4. Command of the basic language skills.
5. Ability to compute with accuracy and assurance.

A major share of the responsibility in any pre-induction program for meeting the first two of these common needs and the need for "mental and emotional fitness" falls naturally in the field of the social studies.

The social studies department of the Cleveland Senior High Schools has reorganized some of its work to attempt to meet this challenge. The regular courses in world history, economic geography, American history and government, and modern problems have been maintained, with some redirection as indicated above. We realize that pupils are passing through high school but once and that it would be short-sighted to sacrifice long-range values for the immediate emergency demands. The material which was organized for two semesters in the course on problems of war and

[1] In the spring and early summer of 1943, the United States Office of Education and CPIT of the War Department invited the National Council for the Social Studies to appoint a committee to work with the Office of Education and the War Department in the preparation of a manual on *Pre-Induction Orientation to Army Service*. The committee was composed of Edgar B. Wesley, chairman, Wilbur F. Murra, Roy A. Price, Howard R. Anderson, Harry Bard, and Allen Y. King. It is now expected that a summary of this material will be available to teachers in December, 1943, through *Education for Victory*, published by the Office of Education.

peace has now been absorbed in the regular courses or has been placed in special pre-induction courses.

Four plans have been developed by our high schools for fitting this "Orientation to Military Service" into the curriculum: (1) Offering a one-semester course with full credit, (2) Offering a one-semester course with reduced credit, the class meeting two, three, or five times per week, (3) Making it a part of the modern problems course, or (4) Making it a part of a one-semester full credit course in pre-induction training. Under plan (4) the classes are taught part of the semester by a teacher of social studies, part of the semester by a teacher of mathematics, and part of the semester by a teacher of English.

Although there is some variation in the order of the study of the several units into which the social studies pre-induction course is divided, most teachers begin with "How and why did the war come?" The War Department has said that, "An understanding of the causes and events that led to America's participation in the war makes it clear to the soldier why he is in uniform."

In the study of the events and causes leading up to our entrance into the second World War, there is a brief review of the causes and course of the first World War. This is generally followed by a study of the attempt the nations made to find peace and security through the League of Nations, the World Court, disarmament conferences and economic conferences, treaties and pacts of various sorts. Considerable attention is given to the rise of totalitarianism — the philosophy, purposes, methods, and aggressions of the Fascists, Nazis, and Japanese militarists. Our own policies and hopes before December 7, 1941—isolationism, military unpreparedness, commitments, neutrality, lend-lease, and the launching of the defense program—are analyzed.

After pupils understand how we were drawn into this war, it is proper to ask, "What is at stake?" "What are the aims and ideals for which we and our allies fight?" An inquiry is made into the basic meaning of democracy for the individual and for society. An elementary but realistic analysis is made of the war on the political and ideological fronts; the "Four Freedoms" and the "Atlantic Charter" are studied. This merges naturally into a study of the kind of peace we seek, the obstacles which will have to be met, some of the psychological, economic, political, and social adjustments which may be required, and the various proposals which have been advanced for peace and security in the postwar world. The student's personal stake as well as our national stake in the war becomes clearer through an examination of the possible consequences of defeat, stalemate, or incomplete victory. This entire study should fortify the youth to face tasks immediately ahead, whether in the armed forces or at home, with courage, understanding, and determination; it should help him to appreciate the faith "which lies within him" and to enjoy a reasonable hope for the future. Individual purpose —morale—of this kind is essential for

the individual soldier who in modern warfare frequently acts alone or with small groups. It helps him to understand the necessity for his service in the armed forces.

Another unit deals with the question, "Who are our allies and our enemies?" The amount of consideration given to this is determined largely by the amount of time available. It should be clear to youth that our enemy is formidable; that he has resources and strengths which need to be overcome. It should be equally clear that the united effort of the United Nations is required if we are to achieve victory; that only as we combine our resources, productive capacity, and our manpower can victory be assured. The prospective soldier is reassured as he comes to appreciate the services that Britain, Russia, China, and others of the United Nations are contributing to the common cause. No attempt is made to have pupils feel that these peoples are our allies because they want to help us, nor that they agree with us in all respects, but rather that they have many purposes in common with ours and that we can and must work with them as understandingly as possible. Moreover, as our pupils take their places on the fighting fronts they will mingle with the peoples of our allies; understanding their characteristics and appreciating their services will make such association both more enjoyable and mutually profitable.

The mobilization of our own resources for the prosecution of the war is generally considered along with that of our allies. Whether the high school pupil is to be soldier or civilian, it is important that he understand that the successful prosecution of the war requires the united effort of a united people. The soldier needs to have the feeling that there is a long and certain supply line behind him. Moreover, as he goes into the armed services he will meet men from all sections of the country, with diverse economic, educational, social, religious, and political backgrounds. The prospective inductee can enter the services with greater assurance—mental fitness—if he understands the type of people who will be his fighting comrades.

As a part of, or closely related to, the instruction to develop an understanding of the background of the war is a unit on "The Geography of This War." The war is being waged in every type of climate and over all types of terrain. Weather, terrain, distances, communication facilities, size and shapes of land and water masses, vegetable, insect, and animal life, conditions affecting health, available resources, kinds of food and other war materials produced in the different areas are all factors affecting military strategy and the day-to-day life of the individual fighter in all the services.

The understanding of world geography is vital to everyone connected with the conduct of modern war. Much of this geography is studied in relation to the study of the conduct of the war since its outbreak in 1939. Special attention is given to the development of map reading skills. Globes and the various types of maps and map projections are studied. Moreover, the soldier

is "concerned with maps of small areas which give directions for following a line of march or for reaching specific locations such as gun emplacements, a supply dump, or a water source." Projection, scale, symbols, and coordinates are elements of primary concern to the members of the armed forces.

Social studies curricula have for years included the type of material outlined sketchily above for developing an understanding of the background and issues of the war; all that was necessary was to reorganize it, bring it up-to-date, and focus it for the purposes of pre-induction training. The introduction of the study of military life, however, required much material which was new to many teachers.

Although Army officers report that the transition from high school to military life is an easier hurdle than the similar change for older men, it is still a hurdle. The change will be facilitated if the prospective inductee knows something about what he may expect and what he may do.

Problems of change inductees may face during the first three months come from a variety of causes, such as the inability to adjust to discipline, fear, homesickness, inability to adjust to conditions of group living where there is practically no privacy—dressing, undressing, sleeping, bathing, etc., with large groups of men. For the majority, these cause no serious difficulties, but they are sufficiently serious for enough men that we should take account of them. Most of the emotional breakdowns could probably be avoided if the men knew more about what was coming. It is helpful to men facing new conditions if they know that fear and homesickness are natural human experiences to the great majority of men going into the services; that the next man is also likely to be afraid and homesick. The emotional strains tend to be relieved by bringing these reactions into the open.

The prospective inductee obviously is aided if he learns that discipline is necessary and desirable; that, in essence, it is control of self in unusual and difficult situations. The best discipline comes from willing acceptance and understanding on the part of the individual as to what is required of him. Discipline is a means to an end and that end is a soldier who will continue to do his duty and perform his mission as a matter of course, regardless of the circumstances. Army officers report that too many men new to the services still think of discipline as punishment—probably a relic of school days when the boy was sent to the principal's office for purposes of "discipline." The prospective inductee should understand that discipline is a natural and necessary requirement where large groups of men are to live together.

The study of the nature of military life may very properly begin with an overview of life in the armed forces, the organization of the forces, the various branches of service, classification, health problems, responsibilities and opportunities, allowances for dependents, and the contrasts and similarities with civilian life. The young man can face induction more confidently if he

knows how the selective service system works: the national program, registration forms, the meaning and use of classification and order numbers, bases for deferment and reclassification, and quota systems. The procedures at the induction and reception centers should be familiar to the young man or woman anticipating induction. An attempt should be made to answer such questions as:

What opportunities for choice between the various services—Army, Navy, Marine Corps, Air Force, and Coast Guard—are available to the inductee?

What factors, such as quota systems and physical requirements, may affect the honoring of preferences?

What choices regarding furloughs between induction and leaving for service are available?

What is the classification procedure and what is the role and nature of the physical examination, psychological examination, mechanical aptitudes test, and interview? Should these be taken seriously?

What should one do if rejected?

What type clothing and baggage should be taken to the induction and reception centers? What is the procedure for outfitting the inductee?

What preliminary training is given at the reception center?

What are the ranks and insignia of officers?

What non-military services and privileges may be enjoyed—services of the chaplain, U.S.O., Red Cross, medical service, pay allotments, rights of his visitors, etc.?

What rights of appeal for reclassification does the individual have?

Some attention should be given to the organization of the armed forces and the services rendered by each of the branches and divisions of the service. The pilot, bombardier, machine gunner, artilleryman, truck-driver, will be able to see his role in the service better if he knows that every branch of the service is coordinated into a great team for the achievement of a common purpose; that the conduct of modern, total war requires an almost limitless variety of services and that each has responsibility to the others and is in turn dependent upon the others. The man in a tank is dependent upon the services of supply and upon the man who repairs the gas line and upon a hundred and one other men and groups.

The opportunities for training provided by the service forces should not be overlooked. The primary purpose of having a large Army and Navy today is to defeat the Axis, but the individual may gain invaluable experience and training which will be useful to him not only as a soldier or sailor but also when he returns to civilian life. He will make a better fighter if he appreciates the opportunities which service in the armed forces may offer to him as an individual.

The prospective inductee should understand that he remains a citizen after induction and continues to enjoy the major privileges and responsibilities of citizenship. He should also appreciate that ours is a citizens' Army—a democratic Army. A brief introduction to the Articles of War and Military Law will indicate that these furnish both a framework of control and a guarantee of soldiers' rights. It may be well, also,

to give some instruction on what his proper relation should be toward civilians as he dons the uniform. Moreover, he has an obligation to keep informed of things other than military so that he will not be handicapped in his understanding of civilian problems in time of war. He should face the fact that he will probably resume his place in civilian society after the war has ended.

We hope very shortly to organize an institute to help our teachers learn more about the nature of military life. We all realize our lack of recent and specific training in this area. The Pre-Induction Training Branch of the War Department has officers assigned to each corps area who are available for just such assistance on pre-induction training.

The work in "Orientation to Military Service," as outlined above, has a definite appeal to high school youth today: it is practical; it gives them a sense of security and reassurance which carries over to their parents and friends. In Cleveland we have not limited this pre-induction training to boys for we feel girls too should be informed about these matters, even though they never enter the services. Their association and correspondence with friends in the services will be more intelligent if they have this knowledge and understanding.

It should be mentioned, in conclusion, that we probably have not given this training as widely as we should have done in the Cleveland high schools; it has been difficult to make it available as generally as the need may indicate. But our experience shows clearly that it has fundamental values.

Mathematics in Pre-Induction Training

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MATHEMATICS is playing a large role in the waging of this war. A common knowledge of elementary mathematics will also be a prominent factor in the vocational and economic adjustment after the war is won. It is important therefore that persons responsible for the directing of the education of the high school youth be fully informed of the proposed changes in mathematical instruction, of some concrete methods of adapting these changes in the curriculum, and of the desirable outcomes that will thus be obtained.

When the first universal draft law was passed in 1941, and the entry of our nation into the conflict appeared imminent, various educational associations turned their efforts toward reshaping the high school program to give our boys the best possible pre-induction training. The march of events has not only shown the wisdom of such policy, but has also forced the inclusion of the education of girls into this program.

The first results of these efforts were a number of reports showing applications of physics and mathematics to military, naval, and aeronautical problems. Two typical illustrations are the supplement to the "Wartime Program in Mathematics and Physics," proposed by the National Council of Chief State School Officers, May 15, 1942, and "Some Military Applications of Elementary Mathematics," prepared by the Mathematics Department of the United States Military Academy at West Point. These and similar reports provided new applications and changes in emphasis only in the regular sequential mathematics; they did not provide for the majority of high school boys, who had had little or no mathematical instruction. The urgent and repeated requests from mathematics teachers and organizations for definite detailed information on the teaching of pre-induction mathematics to all high school boys culminated in the appointment of a committee by the United States Office of Education to "make a survey of the mathematical needs of the armed forces and upon this basis to make a report concerning what the schools can do for the emergency."

This committee published the first of two reports[1] which have had and

1 "Pre-Induction Courses in Mathematics." *The Mathematics Teacher*, Vol. 36, March, 1943. "Essential Mathematics for Minimum Army Needs." *The Mathematics Teacher*, Vol. 36, October, 1943.

will continue to have far-reaching effect in the reorganization of the teaching of high school mathematics. The purpose of this article is to describe briefly the nature and specific suggestions of these reports and to show in particular how the high schools of New Jersey are making practical adaptations of them.

The first report was made under the chairmanship of Dr. Rolland R. Smith, specialist in mathematics for the Public Schools of Springfield, Mass., and president of the National Council of Teachers of Mathematics. The other members of the committee were Virgil S. Mallory, professor of mathematics, New Jersey State Teachers College at Montclair; William D. Reeve, professor of mathematics, Teachers College, Columbia University; Giles M. Ruch, chief of Research and Statistical Service, U. S. Office of Education; and Raleigh Schorling, professor of education, University of Michigan. This was an emergency report to aid the schools in directing the mathematical education of the boys in the last two years of high school. The research upon which the report is based is explained in the foreword as follows:

> Post-induction training in the armed forces is based in considerable measure on manuals of instruction prepared especially for the technical occupations of warfare. It was the thought of the Committee that detailed analyses of a large number of these technical and field manuals would provide a first approximation to the mathematical needs of the military establishments, or at least afford a basis for evaluating the general character of the curricular modifications in secondary school mathematics dictated by the emergency. To this end, the committee requested and received the fullest cooperation of the Army, the Navy, and the Civil Aeronautics Administration.
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> The Civilian Pre-Induction Training Branch, Industrial Personnel Division, Services of Supply, War Department, selected approximately 50 of the Army instructional manuals covering occupations for which there is the greatest training need. These manuals were studied in detail and notes made of the various types of mathematics used, and of the mathematical background involved. In like manner the Committee analyzed about 20 Navy training manuals made available by the Training Division, Bureau of Naval Personnel, Navy Department. Similar consideration was given to the training materials of the Civil Aeronautics Administration. The mathematical needs of typical war production industries were also considered by examination of about 50 unit courses used in the Federal-State program of Vocational Training for War Production Workers conducted cooperatively by State Boards for Vocational Education and the U. S. Office of Education.

As a result of this study the committee made specific recommendations to guide schools in their re-adaptation and Victory Corps programs. The following excerpt shows the direct and concrete manner in which suggestions are given for evaluating and adapting to pre-induction training:

> This range of uses of mathematics is very wide. Every high school pupil must be able to compute with assurance and skill and many will be called on to use the simple algebra, informal geometry, scale drawing, and numerical trigonometry of the right triangle now taught in most courses in general mathematics. A smaller number will be needed who have

mastered all of the sequential mathematics of the senior high school and college. The range of uses of mathematics is as wide as the abilities of high school boys and girls. Intelligent guidance should guarantee that every high school pupil study mathematics according to his need and his ability. The four-year sequence in mathematics, including trigonometry and solid geometry, should be taken by those students who have a real interest in mathematics, who are capable of mastery of the subject, or who are likely to use mathematics in their further training and ultimate occupation. Counselors must realize the need for certain mathematical skills and understandings. On the other hand, it is wasteful to put pupils into such courses if their aptitudes and abilities indicate that they cannot obtain a secure mastery of the material they are studying. It should be remembered in every case that unless the mathematics taught is mastered thoroughly, it will neither be of practical use nor will it serve the other purposes of mathematical study.

In connection with the last recommendation it is of interest to note the tremendous increase in registrations in sequential courses, particularly in courses in trigonometry and solid geometry. In one high school, instead of the usual single class in fourth year trigonometry, two classes were scheduled for the new year beginning in September. On the opening day both classes were so overcrowded that four classes were organized. At the end of three weeks, the work of the regular trigonometry study was so far beyond the ability of most of these pupils that there was a wholesale dropping of the subject. Today there are barely enough students to warrant the two classes that are now carried. As one boy remarked, "If I have to master that stuff to become an officer, I'll resign myself to be a private in the infantry." This is an example that must find a counterpart in many schools throughout the nation and shows an utter defeat of the true purpose of pre-induction training. The boys must be so guided in mathematics instruction that they can reasonably master and use it as a basis for post-induction training. They must not take work from which they do not profit and from which the nation loses.

In making further recommendations, the committee recognized three general categories of pupils for whom specific recommendations should be made, namely: (1) pupils with little or no mathematical background; (2) pupils who have studied mathematics for two years beyond the eighth grade, but who are not now studying mathematics; (3) pupils who are now enrolled in the four-year sequential mathematics courses. Because of the limited time available and the special need of group 1, the committee gave most of its consideration to the details of a one-year special course for pre-induction training. This course stressed the following topics, especially in their practical aspects: arithmetic, informal geometry, numerical trigonometry, elementary algebra. The recommendations not only are inclusive but also list specific topics that can be eliminated from study in the sequential courses or can receive greatly reduced emphasis. For all categories of pupils, stress is laid on maintaining and in-

creasing speed and accuracy in computation and arithmetic reasoning.

The second report, on essential mathematics, was made under the chairmanship of Virgil S. Mallory, professor of mathematics, New Jersey State Teachers College at Montclair. This report was conducted under the auspices of the Pre-Induction Training Branch of the Army Service Forces, assisted by the U. S. Office of Education. Other members of the committee were Rolland R. Smith, specialist in mathematics for the Public Schools of Springfield, Mass.; C. Louis Thiele, Public Schools, Detroit, Mich.; F. Lynwood Wren, George Peabody College for Teachers, Nashville, Tenn.; for the Civilian Pre-Induction Training Branch, A.S.F., William A. Brownell, Duke University, consultant; and for the U. S. Office of Education, John Lund and Giles M. Ruch. Their report is an amplification of the materials of instruction given in the first report, with detailed suggestion for methods of instruction. The nature of the research is illustrated by the following statement from the report:

> The procedure employed by the present Committee was to confer with Army officers directly in charge of training enlisted men and to observe the basic training process itself during the first 13 weeks of the inductee's Army life. To systematize both interviews and observations, a check list of 141 items was employed. This check list, carefully prepared by the Committee, had the benefit of criticism from more than twenty Army training officers stationed in the Washington area. It was then tried out in the original and in a revised form with a dozen training officers in near-by camps. In its final form its contents provided the basis for informal conferences with another group of 96 training officers and for item-by-item checking by 178 officers who were serving as instructors in basic training in 74 different kinds of Army jobs in Replacement Training Centers and unit training centers in eight States. The centers visited are operated by branches which together train 75 per cent of the enlisted men of the Army. The mathematics outlined later is that which is *actually needed* by nearly all men in their basic training. Even the 4 per cent of illiterates in the Army are now being taught many of these topics in special classes. The purpose of the Committee's investigation was to determine those items in mathematics which should make up the *minimum* equipment of the inductee. Every inductee might well have *more* than this minimum; but he *cannot have less* and meet successfully the demands of basic training.

The last two sentences are of extreme significance and importance for every educator today. The materials given in the report are those that must be mastered by *every* inductee and hence it becomes the obligation of the schools of the United States to see to it that every boy is given this minimum pre-induction mathematical training before he is drafted or enlists. The report presents sufficient evidence that the typical inductee does not possess this minimum mathematical training, so that the necessity of doing something positive immediately to remedy the situation is evident.

The report must be read carefully before it is used as an implement of adaptation to the present emergency. In nine definitely worded statements, it makes clear what the list of topics

presented *is* and what it *is not*. For example, statement 1 says, "The list does *not* constitute a course in mathematics . . .," while statement 7 says, "Every item in the list can be justified in terms of general education."

The final list contains 15 headings, totaling 49 specific topics. A typical set is reproduced here:

M. Measurement, including understanding of basic units.

35. Length, weight, area, and volume. In many branches there is necessity for performing the fundamental operations with denominate numbers. Used in determining area of fire, storage tank capacity, firing tensions, load limits; placing poles in field wire communications.

36. Temperature (C and F), angles (degrees, minutes, and seconds), time (24-hour clock). Temperature measurement is used in determining tension for a wire, condition of engines, condition of patients; angles are used in machine shop work, machine gun and mortar firing, map reading; determining the number of degrees of revolution of a rotating shaft. The Army uses the 24-hour clock.

37. Metric system with simple equivalents. Used in medical measurements; radio repair; designating gun caliber, dispensary supplies.

38. Measuring instruments. Compass is used in determining directions; tape and rule are used in measuring lengths; protractor and compass are used in map reading; transit is used in road building and communications construction; calipers and dividers are used in the machine shop; steel square and level are used in carpentry; scales are used in measurement of weight.

39. Limits of accuracy or tolerances. These range from the precise measurements in the machine shop, through the tolerances found in adjusting weapons, to the fairly rough estimates of road overhead clearances. Used in measuring spark plug and breaker point gaps.

40. Estimation. Load that a bridge will bear, weight of a load on a truck, number of men in a group, height of aircraft, distance in scouting, range for firing, distance marched, speed of vehicles.

The report concludes with general and specific suggestions with respect to instruction in the list of minimum essential mathematics.

The schools of New Jersey were particularly fortunate in their ability to adapt readily the suggestions of these two reports. The contributing factors were (1) a large and active association of mathematics teachers in the state; (2) the long-established curriculum in general mathematics; (3) the establishment of a state curriculum advisory committee; (4) the existence of a large vocational education system throughout the state in which industrial mathematics was a required subject of instruction.

In 1941, when the key word was *defense*, the Association of Mathematics Teachers of New Jersey was actively engaged in promoting general pre-induction mathematical training. The program in May, 1942, was given over entirely to re-adapting the mathematics curriculum of all students, either in general or in sequential mathematics, into a pre-induction training that would really function. The yearbook of this

Association for 1943 contained the specific outcomes of two years' research on this problem, along with a digest of the first committee report mentioned in this article. This yearbook has gone to nearly every high school in the state and has been a potent force in adaptation to pre-induction training.

New Jersey was one of the first states in the Union to depart from the traditional college preparatory mathematics curriculum and offer courses in general mathematics for the larger group of high school students who did not plan to continue to collegiate training. In 1938 there were approximately 25,000 pupils studying ninth year algebra and 14,000 studying general mathematics. As early as 1934 a state committee was at work preparing a syllabus for ninth year general mathematics and this syllabus was published in 1937. In 1938 62 per cent of the high schools had adopted a course in general mathematics based on this syllabus or a modification of it. A syllabus for a second year of general mathematics was also prepared and many schools now offer two years of instruction in general mathematics.

The topics included in the syllabus were in part social, including such topics as mathematics of the home, borrowing money, interest, insurance, etc. But in major part the instruction dealt with scale drawing, arithmetic review, percentage, informal geometry, use of measuring instruments, formulas, graphs, and numerical trigonometry. It was relatively easy, therefore, to drop or minimize the social aspect and to substitute practical applications and simple blueprint reading and drawing. The really important element was the fact that the teachers of mathematics had for the most part been indoctrinated and were prepared in the type of teaching found most necessary for pre-induction training.

In November, 1942, the State Department of Public Instruction appointed a Curriculum Advisory Committee to advise the secondary schools in their efforts to provide for pre-induction training. The two members charged with mathematical instruction were Carl N. Shuster, professor of mathematics, State Teachers College at Trenton, and the writer of this article. Since this committee undertook to do for New Jersey what the National Committee did for the nation, it is worthy of note that the first bulletin of the Advisory Committee, issued January 1, 1943, and sent to every high school in the state, concerned itself with the re-adaptation of the mathematics curriculum, giving suggestions almost identical to those of the National Committee.

After the public high schools reopened for the fall semester, 1943, it was possible to learn the extent to which modification had taken place. While no general statement can be made that all schools are carrying on definite types of pre-induction training, a number of specific instances are indicative of the trend in mathematical education.

The number of pupils studying mathematics has increased in more than two-thirds of the high schools in the state. Only in a few high schools has

the number of students in mathematics study decreased. The increase varies from 3 per cent to 54 per cent. The greater increase, however, *has not* been in general mathematics, but in sequential mathematics of the college preparatory type, and by far the greatest increase is in fourth year trigonometry and solid geometry. The increase here no doubt is due to the closeness of these two subjects to military and cartographical applications, and the desire of senior boys to get into the V-12 and A-12 program. As pointed out earlier, lack of guidance in permitting boys to take a rigorous twelfth year course which they are not capable of mastering is still a problem to be solved. These boys can be given more suitable and more sorely needed, mathematical training, and teachers and supervisors must take this fact into consideration.

The more hopeful trend, for war and for peacetime after the war, is the increase in the number of general mathematics students and the shift in emphasis in this course. Perhaps general mathematics, being more practical, is not so bound by tradition as algebra, and modifications in the course may be made quickly to meet an emergency. Almost all schools report that the amount of time devoted to social applications has been decreased. Greater emphasis has been placed upon arithmetic reasoning and computation, simple algebra, informal geometry, numerical trigonometry, measurement, and scale drawing. In many schools a new twelfth grade course in basic mathematics is being introduced, or the usual social-economic mathematics course is being replaced by a course in basic mathematics. The content of this course, described by those who are teaching it, closely parallels the one-year course described in the first report of March, 1943. It is therefore a tenable conclusion that the high schools of New Jersey are adapting their pre-induction training in general mathematics to the recommendations of the National Committee.

The sequential mathematics for the greater number of schools was a year of algebra, a year of plane geometry, a second year of algebra, followed by a year of trigonometry and solid geometry. The war has brought about several major modifications. First, the stress in every subject on numerical applications and also on the maintenance of computational skill not only has produced a more desirable result, but has made the traditional high school teacher arithmetic-conscious. The importance of arithmetic and the need for it in the program of every pupil have at last been driven home to high school teachers. No more need be said. Second, the tremendous number of practical applications of high school algebra, geometry, and trigonometry as revealed by the National Committee and other reports has changed the emphasis in instruction. Thus schools report that academic nonessentials involving special techniques in factoring, handling of radicals, etc., have been replaced by applications to wartime needs of the armed forces and industry. Third, the removal of these nonessentials in the fourth year has

opened the curriculum to new courses in spherical trigonometry and navigation or has permitted the addition of elementary analysis including differentiation, thus preparing the brighter boys for advanced standing in the V-12 and A-12 programs. The schools of New Jersey are thus showing an adaptation of the sequential mathematics to the varying abilities of the pupils taking these courses. In passing, it should be noted that the slide rule, which ten years ago was to all purposes an unknown in high school mathematics instruction, is now almost universally taught in every high school to students in all mathematics courses, general and sequential.

Finally, it is significant that such special courses as mathematics for aviation, mathematics for electricity, mathematics for the machine shop, etc., have entered very few of the high schools in the state. While not a specific recommendation of the National Committee, it was a recommendation of the New Jersey Advisory Committee that such courses were not necessary and should not be given in preference to regular mathematics courses. The modification in content, application, and stress in the regular courses has begun to show its effect in the more friendly and interested attitude pupils are showing toward mathematics study. This will result in a clearer understanding of basic principles, in an awareness of mathematical situations, and in direct and immediate application, all of which should speed the winning of the war and make for a better economic readjustment in the postwar world.

The Modified Health Program at Sequoia Union High School

HEALTH COMMITTEE, SEQUOIA UNION HIGH SCHOOL*

Sequoia Union High School is located in Redwood City, a semi-industrial community just twenty-six miles south of San Francisco on El Camino Real. It is a four-year union high school, drawing its enrollment of approximately 1800 students from Redwood City and the surrounding districts. Its student body is a heterogeneous group, representing a variety of needs, interests, and abilities. Approximately 25 per cent of the students have foreign-born parents or grandparents. All gradations of economic level are represented.

REGULAR HEALTH PROGRAM

Before presenting the adjustments which were made to provide specific pre-induction training in the area of health, it will be of interest to describe briefly the health program upon which the new features were built.

The health program at Sequoia covers the following areas: (1) health service, (2) health guidance, (3) health instruction, specific and related, and (4) environmental development, physical and psychological. The responsibility for coordination and planning is assumed by a health coordinator and a health committee. The coordinator is alert to the school and community needs, with the purpose of stimulating curriculum improvement and coordinating the health activities of the various departments.

Health Service. With the cooperation of the teachers, the regular school health services are carried on by the county health agencies, a school nurse, and the boys' and girls' departments of physical education. The services include: (1) a medical examination given all freshmen, junior, and transfer students, and all boys participating in inter-school athletics; (2) a physical examination with respect to health, weight, posture, eyes, etc., given all students and, in addition, strength and agility tests given by the boys' physical education department; (3) special audiometer tests given by the office of the County Superintendent of Schools; and (4) tuberculosis tests given by the County Health Office. All examinations are followed by individual guid-

*This report was written by the health committee of the faculty, following a joint examination of the curriculum offerings and of the reported Army needs. Members of the committee are Doris M. Dean, Coordinator; Anna L. Bigler, Frank J. Griffin, Lavone Hanna, Secil Kyle, Anna Neff, and Eyla Wooldridge. —A. C. Argo, District Superintendent, Sequoia Union High School.

ance, home contacts when special treatment is needed, and curriculum modification and special treatment of students. In some instances, the parents are asked to come to the school for a conference.

The school nurse is the most active person in the health services. She organizes the examinations, plans the doctor's time, and looks after the immediate health of the students. It is an important part of her job to know the available clinical services offered by the city, county, and state, and, when referrals are made to these clinics, to advise the parents and help make the necessary arrangements. She visits the home when students are absent frequently from school because of illness, and when her observation of a child makes contact with the parents seem advisable. She is also available for emergency first aid, counseling on nutrition, and other health problems. Cumulative health records are kept in her office, and the educational campaigns that precede the immunization programs are organized there.

A very important health service is rendered by the cafeteria committee. This committee, composed of nutrition experts from the home economics department, approves menus submitted each week by the manager of the school cafeteria.

Health Guidance. Guidance in health is provided by individual counselors, and by the school nurse, the doctor, the deans, the subject teachers, and, in certain cases, the counselors of attendance. Factors that influence psychological development and mental hygiene are of particular concern to counselors and deans, who make schedule and environmental adjustments in accordance with individual student needs, and give guidance and counsel to students on personal problems and home adjustments.

Environmental Factors. It is recognized that environment also plays an important part in student health. The spacious setting of the school and the care given the physical plant are planned for a quiet, restful atmosphere. In the classrooms, a democratic attitude is sought in order to relieve tension and frustration.

Health Instruction. The specific health instruction courses at Sequoia occur at the ninth and twelfth grade levels. In the ninth grade, the course called "Fundamental Science" is given five days a week for one semester; in the twelfth grade "Senior Problems" is given daily for one year and includes an extensive unit on health. Instruction is also provided in the related health fields, such as biology, physical education, and home economics.

MODIFIED HEALTH PROGRAM

The war has given new emphasis to health instruction. As new needs became evident, curriculum revision at Sequoia was directed toward achieving health instruction essential both for youth joining the armed forces and for those remaining at home. Much of what had been taught before was retained, but the health committee decided that more time should be given to health instruction and that greater emphasis should be placed upon areas

found necessary for the health of soldiers, such as the following:

1. The adjustment to military life, including health problems, health services, and the development of sound mental health habits. This should result in a willing acceptance of responsibilities and cooperation with other soldiers in health and hygiene.
2. A knowledge of good dietary practices. The goal is intelligent behavior with respect to a balanced diet.
3. A knowledge of common communicable diseases—their methods of transmission, prevention, and steps needed for group and individual protection against their spread. The outcome sought here is readiness to cooperate in disease control measures through personal hygienic living and military sanitation.
4. The development of attitudes and skills needed to prevent accidents and to give emergency first aid.[1]

The health committee, recognizing the pressing need for a health program of a pre-induction nature as well as a sound, long-term health program which would remedy the defects revealed by the health statistics of induction centers, surveyed the subject matter offered in the specific and the two or three related health courses and made certain suggestions for curriculum modification. Following is a brief description of the adaptations.

Fundamental Science. Fundamental science is a required course for all freshman boys and girls. As the average age of this freshman group is 13 to 14, the purpose of the course is to develop workable principles for healthful living in civilian life. The course should, however, lay a firm foundation for sound health habits needed later in Army life, if and when the boys in this group become inductees.

With several deletions, additions, and altered emphasis, this freshman course is being made to contribute to three of the four fields of emphasis which have been suggested for pre-induction health training: (1) knowledge of good dietary practice; (2) knowledge of common communicable diseases; (3) the development of knowledge, attitudes, and skills needed to prevent accidents and to give emergency first aid.

Biology. At Sequoia, the course in biology offers many opportunities for health instruction. It is one of the science courses required for graduation and is elected by a large percentage of the students.

Instruction in biology, as adjusted to pre-induction and other wartime needs, is planned to help equip youth with a balance and a perspective on life based on the understanding and appreciation of people with different cultural and racial backgrounds; the benefits derived from creative and imaginative thinking, and the cause and effect relationship which operates natural laws; the struggles and sacrifices necessary to create our present-day institutions and a realization of their real value; cooperative effort and leadership; the dignity of work and the need

[1] From *Pre-Induction Training in Health for the Soldier.* Prepared by a committee from National Science Teaching Organizations, in cooperation with the Civilian Pre-Induction Training Branch of the War Department and the U. S. Office of Education. Scheduled for publication in summarized form in *Education for Victory.*

for tolerance and loyalty; the dependability of medical science in making repairs to the body. Such realization gives the soldier or the citizen a better grip upon life in general.

Nutrition is an essential unit in biology. A knowledge of body structure and functions is fundamental to understanding nutrition. As regards food selection, the problem here for the student, as well as the soldier, is not so much to find out what, when, and how much to eat, as to develop a taste for desirable foods and to curb a taste for unwholesome foods. Students are given opportunities to observe kinds of food selected in the school cafeteria, and through study and panel discussion to arrive at a better understanding of the importance of correct dietary practice. Many good films are used as well as books dealing with health in the Army, including *The Soldier and His Food* and *The Soldier's Handbook*.

In adjusting biology to a wartime program, emphasis is placed on the causes of disease. A more thorough investigation of specific diseases which are health hazards to men and women in foreign service is desirable. The effects of certain diseases, such as syphilis and infantile paralysis, on the nervous system are studied. Included here also is a study of sanitation, as applied to water, vegetables, milk, sewage and waste material; insects, such as body lice, bed bugs, and ticks; and wild life, especially rodent control.

Biology can make first aid meaningful by giving anatomical and physiological insight into the "reasons why" of first-aid rules and procedures. Practice is given in treating shock, arterial bleeding, and asphyxia, fractures, dislocations, sprains, and burns.

Senior Problems. The Senior Problems course, required for all non-college students, is elected by many of those who plan to go to college. More than 60 per cent of the seniors are enrolled in this course. One quarter of the course is given to a unit on health which includes the following: (1) public health agencies and their work, (2) communicable diseases—their nature, prevention, and control, (3) health standards, (4) accident prevention, (5) mental health, (6) health for everyone, (7) new discoveries and methods, and (8) personal responsibilities for the health of the community. This organization of content readily permits special pre-induction training in health.

Considerable emphasis is given in Senior Problems to military medical organizations and service, military medicine, elementary psychology, emotional control, and individual responsibility in maintaining health. A study of camp conditions, juvenile delinquency, and the prevention of infection has been added to the subjects usually studied in the unit. Other units included in the course, such as "races and cultures," will facilitate adjustment to new surroundings.

While food values and diet are treated comprehensively before the senior year, they are reviewed in the light of military needs. Particular attention is given to vitamins, minerals, and amino acids, and a check made of the students' eating habits.

The study of communicable diseases has long been a part of the Senior Problems course. Additional emphasis this year is placed upon the communicable diseases which are of military and postwar importance. While venereal diseases are studied in the unit on the family, where the moral and social implications can be treated, they are reviewed in connection with the study of communicable disease control.

In the Army there is need of special skills in handling conditions of shock, arterial bleeding, and asphyxia. Students need to know the difference between emergency first aid and medical first aid. To this end the school has engaged the services of a certified Red Cross instructor, who gives fifteen hours of work in this area to the boys in the Senior Problems course. An additional five hours of advanced work is offered for Senior Red Cross certification. At the time the boys are receiving this instruction, the girls are given Red Cross instruction in home nursing, leading to the Junior Red Cross certificate. Accidents, their causes and prevention, are also studied and application is made to situations comparable to those in Army life.

PHYSICAL FITNESS

Physical Education. Physical fitness is an obvious essential for the youth entering military service. Coordinate with the program for correcting remedial defects and for providing functional health knowledge, the program of physical education was strengthened to meet the needs of prospective inductees. The controlling objective is the optimum physical development of the individual.

The director of boys' physical education visited twenty-seven camps, stations, and bases of the Marines, Navy, Army, and Air Force. He was advised by military authorities that the elements of character most desired in the inductee are initiative, leadership, resourcefulness, self-command, and combative spirit. Closely associated are the physical factors of endurance, strength, agility, and coordination.

The young man who has participated in a well-coordinated physical educational program will find it easier to adjust himself to the discipline of the military exercises. The development of self-reliance through achievement aids him immeasurably. Here the obstacle course which has been provided plays a definite part. Fear of heights is eliminated through success in rope climbing and wall scaling. Ditch swings, tunnels, hurdles, ladders, mazes, and the like are planned to develop an agility and coordination from which come assurance, confidence, and self-command. Furthermore, the boy who is well trained in aquatics has no terror of the sea.

In the physical fitness program at Sequoia, participation in games is considered important, for here the boy learns the need for working with his fellows and the inspiration of leadership. The spirit of competitive force is akin to the fire of combat; the desire to be "fit" motivates the actions of youth, and provides a bulwark against temptation.

Endurance has been defined as "the

ability to carry on when others are carried out." This ability is one of the prime factors in physical development. The work which is conducted includes conditioning exercises, ranger activities, drills, elementary combatives, obstacle running, and water safety practice. A well-balanced battery of tests provides definite motivation. Thus the boy is able to compare his capabilities with those of his fellows, and his desire to excel is heightened.

The program emphasizes the need of adequate sleep and intelligent diet to attain the goal of physical fitness.

Entering military service, our youth need full strength of spirit and body. Homesickness, discipline, and fatigue all call for a stern readjustment. The program of physical education must aid the prospective inductee to meet this call to service.

OTHER RELATED FIELDS

Social Studies. Social studies help boys and girls to acquire the knowledge, attitudes, and competence that promote good mental health in a time when the strains and stresses of the war are undermining the security which the individual has felt in his more orderly and sheltered environment. A knowledge of what the United Nations are fighting for, of the meaning of democracy, and of the role and responsibility of America in world affairs; an understanding and appreciation of the life and problems of other peoples and other nations; a recognition of the interdependence of the world; an awareness of the multiplicity of forces in the world, of the desirability and inevitability of change, of the evolutionary forces which have produced modern civilization, and of the forces working to destroy democracy give youth a sense of value and worth necessary for mental poise and balance.

Senior English. English IV is required of all students who graduate from Sequoia. Improved mental health should result from the thinking stimulated by activities planned to develop communication skills in listening, reading, writing, and speech. Some important understandings are listed here.

Every normal person faces fear. A better understanding and realization of this fact should result from discussions of books and magazine articles written by service men under war conditions.

A taste for recreational reading should help the man in service to avoid worry during periods of enforced inactivity. One soldier in *Journey's End*, by Robert Sherriff, kept his sanity by reading *Alice in Wonderland*. In *The Ship*, by C. S. Forester, the gunner wrote verse. A wide reading experience and the resulting acquaintance with many different characters should help the pre-inductee better to understand himself and his comrades.

Literature also helps students to a better understanding and appreciation of the widely varying sectional, religious, racial, and socio-economic backgrounds of those with whom he will rub shoulders. Through discussion of articles in the daily press and elsewhere, there is the opportunity for a better realization of the reasons for fighting.

A special English IV reading list of literature for pre-inductees and a list of suggested essay topics are being used.

This article has described the wartime program of health and physical fitness at the Sequoia Union High School. But curriculum provisions are not enough; it is necessary to check the work which each student has taken or is now taking, to make sure that he is receiving the instruction he needs as a foundation for post-induction training.

The health committee, after assuring itself that the content of the health instruction offered at Sequoia was either adequate or could be adjusted to meet wartime needs, surveyed the programs of three hundred and six seniors to see whether or not health or allied subjects were included. It was found that sixty boys had not chosen biology as a science and were not taking Senior Problems. These boys are now being offered an opportunity for special instruction in the health areas considered desirable as pre-induction training.

Training in Fundamentals of Electricity, Machines, Radio, Shop Work, and Automotive Mechanics

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During the second week of September, 1942, Dr. Warren E. Bow, superintendent of the Detroit Public Schools, called the high school principals together and discussed in detail the role of the secondary schools in the war as outlined at the American Institute on Education and the War held at Washington, D. C., in August. The principals were asked to fit the pre-induction program into the eleventh and twelfth grades wherever possible immediately, and to make plans for the expansion of the program for the second semester of the school year.

SETTING UP THE PROGRAM

The high school principals of Detroit have committees for each subject matter field, each committee being composed of three or more members from their own group and the supervisor of the subject concerned. The chairmen of these committees form the curriculum committee, of which the supervising director of instruction is chairman.

The problem of setting up the pre-induction program was undertaken immediately by this curriculum committee, with Victory Corps pamphlet No. 1 as background material. Most high schools had been operating on a three-program basis, i.e., general, college preparatory, and commercial. Under the new plan the programs were organized under seven divisions, as follows:

Air Service
Army or Land Service
Sea Service
Professional Service
Industrial Service
Commercial Service
Homemaking Service

Each subject matter supervisor met with his department heads and principals' committee to determine how

their offerings should fit into this new plan. After reaching an agreement, the program was presented to the curriculum committee, who either accepted it or made recommendations for changes to fit in with other parts of the program. The result was a program which was satisfactory to all with a minimum of changes in the regular program, and which included all parts of the pre-induction training program. Mimeographed copies of the program thus completed were sent to all schools for use in planning the work of the students for the second semester.

The supervisors of the department with the most changes in their curriculums arranged for meetings in each school with all teachers of their respective departments, counselors, principal, and assistant principal to explain the program and to stress the importance of cooperating with the armed forces. The three departments most affected by the changes were health education, science education, and vocational education. In health education the major problem was the organization of the physical fitness program. In vocational education the pre-induction shopwork program was very little different from that already in use; however, there was the serious problem of space and teachers for the increased enrollment in those classes. The space problem was met by introducing the "swing shift" plan, and the teacher problem was solved by new teachers coming from other school systems and by in-service courses for teachers in other fields. The automotive mechanics which had been offered in three schools was now extended to four additional schools.

In science education the problem was somewhat different. The room situation in crowded high schools, the shifting of science teachers from one subject to another, priorities on supplies and equipment, and proper placement of students were major difficulties to be overcome. To help in the room and teacher problem, courses in descriptive chemistry and physics, applied physics, community science, consumer science, physiology, physiography, and geology were discontinued for the duration. Pre-flight aeronautics was scheduled as a one-year course in the twelfth grade; therefore physics, which had been scheduled for that grade, was transferred to the eleventh grade to enable the students to get this background for the pre-flight course. This necessitated shifting chemistry from the eleventh to the twelfth grade to enable the professional service student to get in required subjects for college entrance.

SELECTION OF STUDENTS

For graduation from a Detroit high school, one year of a science is required. Most students fulfill this requirement by taking one year of biology; therefore physics and chemistry are electives for the majority of students. In common with most school systems, Detroit schools have offered the standard laboratory courses in physics and chemistry and also non-laboratory courses in descriptive chemistry and physics. In general, the college preparatory students made up those taking the labora-

tory courses, while the descriptive courses were elected by other students for various reasons, such as interest in the subject or need of hours of credit. As a rule the ability level of the students in the descriptive courses tended to be lower than that of the students in the college preparatory classes.

The Detroit schools use a system of counselors which in practice means that the counselor is responsible for advising between four and six hundred students in regard to their programs. It is almost impossible for counselors to know their students personally because of the numbers involved, and they tend to use the rule of thumb methods in programming. With the introduction of the pre-induction program, certain problems arose as to what students should take what course. A general agreement was reached that those whose I.Q.'s were in the upper quartile should be programmed for physics, whether they planned to do college preparatory work or not. This worked very well.

No general agreement was reached, however, on who should take the machines, electricity, radio, automotive mechanics, and pre-flight aeronautics courses. Two schools of thought developed among the counselors. One group felt that only the upper 50 per cent of the students would be likely to be chosen for specialized Army training, and that only these should go into the pre-induction training and physics courses. The other group felt that every boy should be required to take pre-induction training for at least one year before leaving school. Both theories have been tried for over a year in the various schools. From this experience there emerges rather general agreement that only those in the first quartile in intelligence really profit from work in an intensive war-enriched course in physics and fundamentals of radio, and only those in the second quartile in intelligence profit from pre-induction training in machines and electricity. To put all students into pre-induction training courses in physics, machines, electricity, radio, pre-flight, and automotive mechanics means disheartened and overworked teachers, classes bogged down by those who cannot or will not learn, and good students held back by poor students. Typically the teachers remark, "We started off with everybody, just like the old descriptive courses, but it didn't work. We held meetings with the counselors and told them what was happening. They agreed to give us only the better students remaining from those not taking physics. This semester my classes are much better and we are really making progress."

A question may be raised regarding the reasons for giving science training to only those students above the median in ability. It is not that Detroit feels that the other half cannot profit by science instruction. The present situation is purely an emergency measure. The armed services find that it takes an undesirably long time to develop certain critical skills. The high schools can shorten the time by pre-induction training. In general, only those with I.Q.'s of over 110 are likely to be chosen by the Army for such train-

ing. Taking care of this group of students requires every available science teacher. In the meantime, a great deal of thought is being given to what kind of science will be best suited to every type of student in the postwar world. It should also be pointed out that while many students are discouraged from taking specialized science courses, other specialized courses are open to them, for example, certain shop courses and the course in pre-induction driver education.

Various devices have been tried to help in the selective process. One school gives a mathematics test to all students in physics, machines, and electricity at the beginning of the semester. According to scores made, some students are asked to drop the course, others to switch to physics instead of machines and electricity, and vice versa. The teachers feel that this plan works quite well. Another school has a rather elaborate system whereby each student is given an index number based on general I.Q., reading ability, and past performance in other courses. This index is used to assign the student to the proper course. It also has given good results in getting the right student into the right course. The important thing seems to be that counselors have a definite method of selection, one capable of choosing those most likely to succeed in the work to which they are assigned.

It was found almost immediately that fundamentals of radio was a much more difficult course than the others. The radio teachers are unanimous in the opinion that to profit by the course the student should have had a year of physics or, less preferably, the pre-induction course in fundamentals of electricity. Fundamentals of radio, therefore, becomes a twelfth grade subject. The pre-flight aeronautics teachers also prefer students who have had physics. Here is a conflict as yet unresolved. Because of his other required subjects a student finds it almost impossible to take both fundamentals of radio and pre-flight aeronautics. He must take one or the other, and if his college preparatory program calls for chemistry, he can take neither. Another observation made by many teachers is that the refresher courses in mathematics are helpful, and that the students who have taken them do better than those who have not.

At the end of a full year's trial, it is proper to attempt an evaluation of how well we are meeting the needs of the men in the armed forces. Unfortunately there are no objective evidences at present on our success. The Army releases no data on the relative preparation of those from the different areas. However, there is considerable evidence to show that we are succeeding. The schools have many visiting members of the armed services who were former students. Without exception they feel that they had a good foundation for specialized training. This is particularly true of those taking the ASTP training. The visitors come from many colleges and universities over the country and not one has complained that his preparation was poorer than that of others in his training program, and most of them believe that it was

superior. The teachers feel, as a result, that they have been doing a good job.

TEACHING PERSONNEL

The introduction of the pre-induction training program found the Detroit school system in a favorable situation in regard to teaching personnel. In large measure this was due to an unwritten ruling of many years' standing concerning teacher training. To be eligible for a high school science appointment, a teacher should have had college training in each of the fields taught in the science department, i.e., physics, chemistry, biology, physiology, and physiography. Since most of the pre-induction training content is in the field of physics, there were many teachers in the science departments who were prepared for the work in machines and electricity. With the shift in the grade placement of chemistry and physics, a fairly large number of chemistry teachers were available for teaching these courses.

Fundamentals of radio presented a distinct problem. Most of the physics teachers had had some work in electronics or radio, but from lack of use it had slipped from their minds or had been out-dated by the rapid progress in that field. Very few had experiences recent enough to be of service to them. A search through the personnel records showed two social studies teachers in the city who were radio amateurs. One of them was head of the social studies department in his school. Both volunteered to teach radio, and have done an outstanding job. In one case the man concerned felt much more sure of the practice of radio than the theory. It was possible to team him up with a physics teacher in the building who had theoretical background but no practical experience, thereby achieving a very good working arrangement. Nevertheless the demand for radio teachers exceeded the supply. Finally arrangements were made with the physics department of Wayne University[1] to offer a course in fundamentals of radio to in-service teachers only. The course had an enrollment of over thirty teachers and met two hours weekly during the spring semester of 1943. The course was aimed directly at the problems which would confront the teacher of fundamentals of radio in the high school. As a result, Detroit acquired a good supply of radio teachers from which to draw as needed.

Many of the science teachers drawn into service for the teaching of the pre-induction courses enrolled in ESMWT and other courses offered by Wayne University, the University of Michigan extension, and other local colleges and universities. Because of its favorable salary schedule (recently revised upward), the Detroit system was able to attract a number of competent teachers from other localities.

TEACHING EQUIPMENT

Teaching the pre-induction training classes has been a story of triumph over adversity in regard to physical equipment. The first handicap was a shortage of science rooms. This was

[1] Wayne University is the Detroit municipally owned university controlled by the Detroit Board of Education.

solved by rather elaborate program juggling so that a class might meet in several different rooms during the week. Perhaps the class would meet three days in a classroom, one day in a science lecture room, and one day in a laboratory. Almost all teachers felt that some laboratory work was needed, although it was not always possible to give it. Science material is carried from room to room, hour by hour—an undesirable situation but unavoidable. In a few cases it was possible to equip new science rooms with material on hand. In general, priorities made it almost impossible to obtain new equipment, but fortunately the physics equipment in all schools is excellent, and this is used in physics, machines, and electricity. As new equipment became available it was purchased. All schools are now equipped with film strip projectors and film strips on physical fitness and shopwork. Many schools have film strips on automotive mechanics, pre-flight aeronautics, and electricity. These have proved so successful that more projectors and film strips are being considered for purchase in the near future.

Electronic equipment was particularly hard to acquire because of the very high priorities needed. The radio teachers asked students to bring in discarded radios to be taken apart for teaching material. The response was excellent. In one school, for example, over sixty radios were turned in. These were taken down into component parts which were filed in trays for later use. A very serious lack developed in meters since those in the physics equipment (200 ohms per volt) were useless for most radio purposes. A search for second-hand meters was quite successful. Most of the schools now have at least one good volt-ohm-milliammeter or equivalent.

The classes in machines and automotive mechanics also needed equipment. Several cutaway sections, assemblies, etc., of engines, axles, and small parts were obtained from local manufacturers who had used them for sales purposes. Factory service manuals and charts were obtained from many of the automobile manufacturers. Many schools bought "jalopies" from junk yards and tore them apart for teaching material. While the lack of equipment is still serious, it is gradually being met. It is extremely important that we have this equipment, for typically the student entering the class says, "Where are the machines that we are going to study?" If none are available he loses that keen edge of interest which would have made the class so much more valuable to him.

The textbook situation was handled with care. During the first semester no textbook was used in the pre-induction training courses. Teachers followed the outline as suggested by the War Department, using the supplementary material at hand. In the second semester, the regular physics textbook was used in fundamentals of machines and fundamentals of electricity, plus more supplementary material. On the basis of the full year's experience, however, textbooks were chosen and are in use in all schools this semester. Knowing what to look for,

the teachers did a good job in selecting the new books and in general are satisfied with the results. An innovation to Detroit was the setting up of laboratory and shop libraries to be used as supplementary material. These libraries include other textbooks, reference books, and many government technical manuals. The latter are a good teaching device because they show the student where the material he is learning in class applies in the armed services. The Department of Visual Education is also providing as extensive a list of motion pictures as is available.

From the beginning the pre-induction training program has been planned as a part of the whole program, not only in terms of the war effort but also in terms of long-time planning. We are living in an age of science; therefore technical training becomes a more important part of our American culture. With this in mind, the Detroit schools are attempting to set up a science and vocational program to meet the needs of all high school pupils.

In spite of the fact that the work has been made more intensive, the physics enrollment has increased 59 per cent and, if we include machines, electricity, and radio as physics, the increase has been 146 per cent.[2] We believe that machines, electricity, and radio enrollments will continue to increase, but after the war the emphasis on war effort applications will change to vocational applications, and there will be a very close tie-up with the work in the vocational department. Enrollment in automotive mechanics and shopwork has shown an increase of about 25 per cent. Further increase in these courses at present is impossible because of lack of available facilities. More shop facilities were added this fall in the form of a new Aero Mechanics Vocational High School located on the edge of the Detroit City Airport. All work offered in this school will necessarily be practical in nature. The academic subjects, such as mathematics, science, and English, are pointed toward their utility as it pertains to the various aspects involved in the construction and service of aircraft.

The outlines for fundamentals of machines and fundamentals of electricity, as received from the War Department, were good outlines of the physics courses which we had been teaching, and many teachers began teaching these courses without giving much thought to the purpose of the courses. However, the cooperation of the teachers of these courses was enlisted, and many of the problems were solved. Indeed, working out all the above problems together has enabled us to clarify our thinking for postwar planning of a program of teaching directed toward a better way of life.

[2] In giving the above per cent increase or decrease in enrollment, we have not considered the 11 per cent decrease in the total enrollment of the tenth, eleventh, and twelfth grades during the last year. The figures are based on enrollment of October 2, 1942, as compared with that of October 1, 1943.

Guidance In Pre-Induction Training

J. FRED PATTON

DIRECTOR OF GUIDANCE, FORT SMITH HIGH SCHOOL

DELMER ASHWORTH

SENIOR COUNSELOR, FORT SMITH HIGH SCHOOL

Like many other high schools before the war, Fort Smith High School, Arkansas, had a guidance program which accomplished a great deal but which left some of us with a feeling that more should be done, that our graduates often were unprepared mentally for personal problems they would encounter as well as poorly equipped for the business of earning a living. As a matter of fact, the school staff was not really "sold" on guidance. Too many of us regarded guidance procedures, at least in the form which they sometimes took, as being more or less perfunctory gestures. We had little real faith in them and that feeling—or lack of feeling—probably communicated itself to the students.

While we realized in a detached, academic way that young people have many problems with which they need help, many of us thought of guidance as a business of the paid guidance worker. We did not realize fully that everyone who comes into contact with youthful minds is guiding for good or for bad, and that the paid guidance worker can accomplish relatively little unless the guidance plan and the entire school program are in harmony and unless it is supported by the thoughtful help of the entire teaching and administrative staff.

With the coming of Selective Service, as it became increasingly evident that we were headed toward war, we became more conscious of specific needs in at least mental preparation for service in the armed forces. When Pearl Harbor and intensified mobilization revealed our pathetic state of unpreparedness, we were ready for anything that would help. Army and Navy emphasis on needs brought home to us our shortcomings as educators. We were ready to scrap precedent in the realization that the schools faced a tremendous task if they were to furnish the trained minds and healthy bodies which would win this war. As we became increasingly aware of the problems in preparing for war, we also became more conscious of the problems of readjustment the eventual peacetime will impose on our boys and girls and more willing to adopt the measures and devices which will give the greatest help now and in the future. There has been a change in the

psychology of the teaching staff, so that it now accepts the dictum that every teacher is a counselor.

Pre-induction training was born when the War Department asked the help of the schools in meeting the tremendous problems mobilization for war had brought. Education and experience records were utilized as never before, and school shops and equipment went on twenty-four-hour duty. Out of years of trial and error in the field of guidance, and in the presence of the most concrete expression we have ever had of specific needs of students for an all-important purpose, has evolved a guidance system that is helping boys and girls to solve their problems.

WARTIME GUIDANCE PROGRAM[1]

Fort Smith High School begins its guidance work three years before the boy leaves school in order to provide the greatest possible time for preparation for induction into military service after his eighteenth birthday. In the sophomore year special emphasis is given to the study of occupations. The aim is to guide the student in selecting a job or type of job for which he may make specific preparation for use in military service or wartime work and with the hope of using it after the war is over.

Preparation is intensified in the boy's final year in school. In the senior year every boy must take a pre-induction course. Since, in addition to basic training for combat, most soldiers are taught to perform specialized tasks, this requirement assumes considerable importance. Of the approximately 650 specialized jobs in the Army of the United States, approximately 350 are strictly military jobs while 300 are dual military-civilian occupations. About nine out of every ten men inducted will be assigned to jobs requiring specialized training. Lowering of the induction age has increased the percentage of inductees with no training or job experience immediately useful to the Army. Thus we insist upon every boy's enrolling for a pre-induction course which will give the Army a foundation to build upon.

Our vocational and industrial education department provides excellent opportunities for training in pre-induction courses. Well-equipped shops give training in automechanics, aircraft mechanics, metal work, welding, woodworking, machine shop, and fundamentals of electricity. These shops operate for the benefit of high school students in the daytime, and at night are used for instruction of adults for wartime occupations. Many of the senior boys voluntarily ask for additional instruction in the war-training classes outside school hours. Pre-flight and basic mathematics are among the other pre-induction courses which have proved popular.

THE COUNSELING PROGRAM

As an Army representative at the recent national conference of state supervisors of guidance and occupational information expressed it, "Most young people are aware of their need

[1] See also "Guiding Youth for Army Service." *Education for Victory*, pp. 11-19, November 15, 1943.

for help. Boys want to know what abilities the Army can use; they want assistance in discovering their aptitudes and in knowing how these match the Army's needs; they want aid in planning their school programs and their out-of-school time before induction so that they can be ready to serve their country; they want to know how to get ahead in this, their first major job; they want guidance in thinking through what wartime living and an unpredictable future mean to them." To help meet this need Fort Smith High School has developed a counseling program under which staff members not only are available at specific periods of the day for consultation but also systematically undertake to reach every student in the school in the course of the year. Greatest emphasis, of course, is given to adequate counseling of seniors.

This staff is supervised by the director of guidance, who is assisted by the dean of girls. By reason of their regular jobs they are easily accessible to all students and in a position to be familiar with individual students' problems. Assisting them at present is a group of five teachers who give definite time, in most cases one period each day, to counseling students. One counselor is responsible for group and individual guidance of the sophomores, a second devotes his time especially to juniors, and a third to the seniors. The chairman of the commercial department and the director of vocational education each gives time to counseling students on problems touching upon their work. Special arrangement exists under which one counselor and the dean of girls give attention to guiding girls into nursing, because of the critical need in that field.

Of course not all counseling falls into these neat compartments. The counselors help each other. In the case of senior students, this is particularly true. One counselor cannot do all that should be done for the seniors. It is his special function, however, to take the lead in seeing that the particular needs of seniors are met. He calls upon other counselors for help in reaching seniors whose outside employment precludes conferences during scheduled hours. He checks up on the age of senior boys and sees that those facing probable induction have suitable counseling and every aid toward insuring graduation before going into service. His function is not to answer all questions himself but to direct the student to the person best qualified to give needed information and advice. This person may be another counselor or a teacher, or, for that matter, any public official or private citizen who may be the logical source of help.

While every effort is made in counseling students to take care of their preparation for postwar entry into civilian life, the primary emphasis is on the fact that the first function of every individual is to discover how best he can help win the war. This means that boys are prepared as specifically as possible for military life. At the same time the effort is made to find those boys who for physical or other reasons will not be inducted and to prepare them for worth-while contribution in civil life. Those destined

for entry into the armed forces are helped to single out the branch of service in which they are likely to be most effective and to prepare for it. This means that intelligence, aptitudes, and interests are assessed and suitable guidance steps are taken in the light of facts ascertained.

The testing program includes tests of intelligence, reading, preference or interest, aptitude, and achievement. Aside from the information it furnishes, this program gives the boy experience in taking tests such as he will be given on induction to determine assignment in service.

The test results are recorded on a cumulative inventory card for each student and are thus of value also for the future, notably when the time comes to fill out the boy's Educational Experience Summary Card which he will take with him to the induction center. Other items recorded on the inventory card which are of value to the counselor are the student's grade record, extracurricular activities, offices held, hobbies, work experience, and family background.

The climax of much preparation is the counselor's interview with the individual student. This takes place in a counseling room, and it is simply an informal conversation. The counselor merely finds some pretext on which he can call in the student, and friendly conversation does the rest. One important purpose of the interview may be that of helping the boy evaluate the degree to which he is preparing himself for induction. This conference may be followed up by others. Frequently the student is directed to another person who is in a position to give him more definite information. The counselor makes a written record of the interview for use in follow-up procedures, and keeps parents informed of the counsel which has been given.

OCCUPATIONAL GUIDANCE

Frequently the student is directed to the occupational file in the library. This special file contains hundreds of pieces of literature dealing with occupations and with the armed forces. Here the student may add much to his knowledge of any branch of service, and he may learn much about the requirements for many of the peacetime vocations or wartime industrial jobs. Supplementing this information are pamphlets and leaflets available in the counseling room. These are often consulted in the course of the interviews.

The counselor not infrequently finds occasion for giving help other than that concerned with occupations or wartime service. He may help arrange the correction of physical defects, for example, or he may render signal service by helping bring desirable change in the attitude of a sullen, uncommunicative boy who has been something of a classroom problem. Again, he may help secure part-time employment for needy students and at the same time help solve our manpower problem. This aspect, incidentally, may have importance in military life later. High school students who are prospective inductees do not have extensive job experience, and it may be helpful if vocational training can be supplemented by actual

job experience. Our school assists students in getting part-time work also because this helps stop the exodus of boys from schools to jobs. Close connection is maintained with the office of the United States Employment Service and with other sources of jobs. Counselors visit local factories to learn more about their needs. At commencement each spring the guidance office cooperates with local daily newspapers in arranging a double-page spread of pictures of graduates, giving their training, job preference, and experience. Many jobs have thus been secured for graduates, but more important, perhaps, is the dramatization for the community of the problems of its youth.

Teachers are urged to turn in anecdotal reports of incidents which are enlightening as to needs of specific students. Such reports often give counselors a key to the right approach with an individual, in helping him to make desirable adjustments. In order that teachers not directly charged with counseling duties may understand what the guidance group is trying to do and may thus assist, faculty meetings are occasionally devoted to the guidance program, stress being given the idea of the responsibility of every teacher in the field of guidance.

THE TEACHER'S RESPONSIBILITY

Much more might be said about the place of counseling in the guidance program. Significant as this phase may be, however, the program includes other aspects. Emphasis is given to the idea that every teacher is engaged in guidance work. Every subject, as well, contributes its influence in shaping the mental attitudes of the student in addition to determining his fund of usable information. Obviously the slant given the content of a course, along with the tactics and enlightened attitude of the teacher, is tremendously important. A vital function of guidance is seeing that classroom work helps achieve the objectives of the guidance program. This does not mean that the guidance staff should determine the curriculum. But it does mean that if guidance work reveals the need for some specific instruction or for the development of certain attitudes, that adjustment should be made. Particularly is this important in connection with pre-induction training.

The Fort Smith school joined the High School Victory Corps at the outset, adding a period to the school day to devote to its activities. With the start of this school term, however, it absorbed the Victory Corps program, making those features that had proved most worth while a part of the regular curriculum with full credit toward graduation. Those judged most essential—physical education and, in the case of senior boys, shop or other pre-induction courses—were made required courses.

Since the armed forces face no more basic manpower problem than that of securing men who are fit and who can keep that way under conditions of military life, the physical education department has conducted health examinations, working in cooperation with the school nurse. Corrective exercises are given, along with military drill and

other types of physical training. The biology, hygiene, and home economics teachers also are helping to equip the prospective inductee with the skills, knowledge, and attitudes he will need in the health area.

Other obviously needed adaptations to war have been made in mathematics and science classes. In most vocational courses the work done will carry over directly to military life. Social science, language, and English classes do much to instill patriotism and develop in each prospective inductee the understanding that this is his fight.

Close cooperation between the guidance staff and the individual teacher has made possible increased effectiveness in meeting wartime needs in the various subject matter fields. The guidance director passes on to the proper teachers information he receives as to the deficiencies which the armed forces find in inductees. The English teacher, for example, may change emphasis in his classes because the Army finds that men need more specific training to enable them to understand orders and commands, to read manuals effectively, to report accurately and clearly on observations and missions, to give orders and instructions, to write or print legibly, and to take notes and to carry on correspondence. Similarly, essential information as to needs and new developments in other academic and in preinduction fields is conveyed to teachers. While official statements of needs may be forwarded directly to these teachers, in many cases more progress is made if the guidance director, having digested the multitudinous communications received, enlists the help of the teacher in trying out new practices or in slanting course content to attain certain specific goals.

INSTRUCTION ON MILITARY LIFE

A major phase of wartime guidance, that of helping each prospective inductee to know in advance about Army life and organization, may in part be taken care of through the work of the counselors. The guidance director, however, and other teachers as well, must help if this goal is to be wholly realized. The boys should be acquainted with the process of entrance into the Army, the process of classification and assignment for training, the organization of the armed forces, group living in military life, and military discipline and its contrasts with civilian discipline. Prospective inductees are advised on what they should do in the interviews at the induction station and the reception center. The types of jobs available in the various branches of the armed forces, and the requirements for the jobs in which they are most interested, are described, so that they may make intelligent choices and find their way into the phase of military life in which they will be happiest and can contribute the most. At the same time the boys must be prepared for assignment to jobs other than the ones for which they think themselves best fitted. They must be encouraged to take help where they can find it in preparing for military life, whether that help is found in the counseling room, the classroom, the club

meeting, the assembly program, the library, at near-by camps, or through the mails. Obviously, this is a job in which all who associate with these boys can help.

SPECIALIZED TRAINING

One thing has been reserved for separate emphasis in listing duties and activities under our guidance plan. That is the matter of acquainting boys with the possibilities of specialized training to be found through the Army Specialized Training Program, the Army College Program of the Enlisted Reserve, the Navy College Program, and the Air Corps Program. A great deal of patient counseling is inevitable in this connection. The counselors and the guidance director use all possible means of acquainting the boys with the existence of the programs, their possibilities, their requirements, and the necessary procedures in securing admission to them. At times a guidance director is likely to feel like a recruiting officer, but he is doing the thing which will be of greatest service to the boys and at the same time to the nation.

Our guidance workers recognize that boys are subjected to pressures. One of the most serious is the glamourized depictions of military life they see in the movies and the dramatic impressions the boys consequently have. Not every man can be a pilot. While a pilot renders great service, it must be recognized that a good ground man is worth much more than a poor pilot. The counselors help young people to work for goals that are within the reach of their abilities and within the bounds of Army possibilities. The information which the counselor has at his disposal helps the boy to face his assets and liabilities realistically, and to make a sound decision.

The guidance director and counselors in Fort Smith High School have done their best to make the most of the opportunities to be found in their community and to make their work a faculty-wide activity. At the same time they recognize that for sound guidance in certain fields there is no substitute for the counselor who has (or takes) the time for a leisurely, friendly, patient conversation with the student. Finally, while many references have been made in this article to what the guidance workers *do*, it must be pointed out that they seek at all times to inform, interpret, and advise rather than to dictate. What course is taken or what choice is made should be of the student's free election.

Wartime Education in a Small Rural High School

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THE small high school faces difficult problems in equipping its boys and girls with the special skills and understandings required by the wartime situation. But important contributions can be made—no matter how small the school—to help meet the needs of students who will be entering military service or serving on the home front. The task calls for ingenuity, resourcefulness, and much hard work. The following account shows how a wartime program was developed in a rural and small town high school.

THE SCHOOL COMMUNITY

Comer, where the school is located, is a community of about 1,000 population in the hill country of Northeast Georgia. The community is agricultural, cotton and grain constituting the main crops. The town proper is composed of businesses and industries which are necessary to agriculture, such as a bank, general merchandising stores, groceries, meat markets, garages, cotton warehouses, fertilizer plants, and cotton gins.

About 125 boys and girls, living within an area of forty-five square miles of Madison and Oglethorpe Counties, attend the Comer High School. The elementary and primary departments have an average enrollment of 200 pupils. Seventy-five per cent of the student body resides on farms, the remaining 25 per cent within the city limits. Five school busses provide the necessary transportation. The staff of the school is composed of fourteen members, including the principal. There are seven grades in the elementary and primary departments, with as many teachers. The high school department is comprised of four grades, with four academic teachers, a teacher of vocational agriculture, and a teacher of homemaking. One of the four academic teachers is also a qualified librarian.

An ample playground and a spacious gymnasium, a modern canning plant, and a well-equipped farm shop surround the main school plant, which contains twelve classrooms, auditorium, library, laboratory, kitchen, dining room, and facilities for the homemaking and agricultural departments.

SETTING UP THE PROGRAM

Following a semester of study, conferences, visits to the Navy Pre-Flight

School at Athens, meetings with High School Victory Corps officials, and student and parent conferences, the school staff agreed upon a program designed to meet the war emergency, and at the same time to take future peacetime objectives into consideration. The program was approved by the High School Victory Corps Director and his staff, and the Comer High School received its membership certificate in the Victory Corps just prior to the second semester of the school year 1942-1943.

The setting up of the Victory Corps program was facilitated by a thorough program of guidance which was carried on by every member of the high school staff during the first semester. An occupational inventory of student abilities and preferences proved helpful, as did summaries of the teachers' evaluation of each pupil.

The curriculum was revised and courses were planned to meet the pre-induction and other wartime needs of the students and community. The basic courses offered included mathematics (arithmetic, algebra, and plane geometry), physics (wartime course), and English grammar and composition. "Citizenship" was not set up as a separate course; through the cooperation of the teachers it became an essential objective in the work of every class.

The following pre-induction and vocational courses were offered: Agriculture and farm shop; homemaking, including nutrition and rationing; typing; the War Department's Pre-Induction Training Courses in the fundamentals of shopwork, radio, electricity, automotive mechanics, and machines; airplane engines, pre-flight aeronautics, and navigation.

Physical fitness and nutrition received a great deal of emphasis. Ninety minutes were devoted daily to a period of rigid physical training for every student certified by the local medical authorities as capable of participating. One hour weekly was devoted to classroom work in nutrition and health. Under the supervision of the homemaking teacher, this program was made vivid through guinea pig experiments, personal diet charts, and the like.

CURRICULUM ADJUSTMENTS

Since a small high school is obviously limited in the number of specialist teachers at its disposal, it was necessary to delegate subject matter teachers or the principal to act as supervisors of study in the pre-induction courses, and to draw upon the resources of the community for practical training. For example, five boys were directly interested in automotive mechanics. The school had no instructor trained to teach this subject, so the principal and the boys studied it together in the classroom, using the outline for such a course provided by the War Department. Under the supervision of the principal, the boys secured their practical training in a local garage. Three boys studied the fundamentals of radio and electricity in the same manner under the supervision of the mathematics teacher. These boys secured practical training by assisting the local electrician and telephone repairman.

Eleven boys who were interested in

machine shop and aviation mechanics received their training in the Athens Vocational School (VE-ND Program), taking courses in mathematics and physics in the local high school each morning and commuting sixteen miles to Athens for their applied courses in the afternoon. Reports were made to the local principal by the director of the vocational school and credit for the work done was allowed the participating students. In these courses each student worked six hours a day, five days each week.

Fifteen boys and girls were interested in mechanical vocations, but they were too young to become immediately available to employers. This group studied the fundamentals of shopwork under a teacher who learned with the students. Tools necessary to the course were secured, and the students and teachers learned from every source available how to use them and how to care for them.

A group of girls who were to go into commercial sewing rooms within a few months were given background training in the fundamentals of power sewing machines. This course, originated by the school, was set up to meet the need cited above. The social science teacher supervised the study of the group. Although a power sewing machine was not available, the girls utilized books and charts to learn the basic principles of construction and operation of the equipment. They also devised interesting exercises designed to build up coordination and speed in using the hands, eyes, and feet.

The course in pre-flight aeronautics was taught by the English teacher, who studied along with the students. The physical science teacher spent her full time in adapting general science and physics courses to the applied course needs of the students. The mathematics teacher, in addition to her regular courses, directed the girls' physical fitness program. The principal conducted the boys' physical fitness program in addition to teaching several of the pre-induction courses. The vocational agriculture teacher, besides his work with in-school and adult students, carried on a program of increasing food production in which every agricultural student cooperated. The homemaking teacher assumed responsibility for the rationing and nutrition program in addition to her regular courses, and her students also carried on projects designed to increase the food supply at home.

The students in the typing classes obtained jobs in local firms. This served a twofold purpose: supplementing the students' training with practical experience, and filling vacancies caused by the war.

The scheduling problem in the school was simpler than might have been expected. This was due to the cooperation of the staff members, who met the demands of each new situation with wholehearted enthusiasm. Several teachers taught two or more groups simultaneously. For example, the mathematics teacher supervised seven students in typing, two students in the fundamentals of radio class, and one student in the fundamentals of electricity. In the whole school there was

only one student who was unable to arrange a satisfactory schedule.

A COOPERATIVE EFFORT

During the entire process of gearing the curriculum to wartime needs, the cooperative spirit of the staff never faltered. The understanding and cooperation evident throughout, however, did not preclude differences of opinion and approaches. The main thing was that a staff and student body united in purpose and endeavor resulted in a unified program.

An evaluation of the long-time outcomes of this wartime program cannot, of course, be made at present. But some immediate outcomes may be listed. The school was awarded second prize for collecting the most salvage material per capita in the state. The pre-induction courses enabled several boys to enter the armed forces in the specialist jobs which they desired. These courses inspired the younger students to strive for greater success in the things in which they were most interested and most capable. Two boys have become outstanding in developing abilities hitherto unknown.

The interest which parents have manifested since the beginning of the program has grown constantly. A Parent-Teacher Association, which a year ago was declining, chiefly because parents were entering war work, has become active again through the desire of the parents rather than through any organized effort on the part of the school officials. More fathers are attending than in the days before the war.

The school lunchroom has the patronage of more students than ever before. In spite of the fact that federal aid through the Work Projects Administration has been withdrawn, the local community has assumed the cost of supervision as well as more of the cost of food. The nutrition program, which is a part of the physical fitness course, is largely responsible for this increase in interest and support from the community.

In conclusion, one of the outstanding results is the present setup of the Victory Corps program. Rough spots have been ironed out, better methods have been discovered, greater activity in civic and patriotic movements is evident among the students, the curriculum can be readily readjusted to meet the new needs of the war effort, and, finally, the community is giving stronger and stronger support to the program.

Organization and Administration of Local Programs of Pre-Induction Training

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After two years of war there is still much uncertainty as to what the schools should do to meet pre-induction needs. This is not to say that schools have not responded quickly and willingly to demands for service in support of the war effort. The problem facing the administrator has been one of establishing priorities among the new, and in some cases conflicting, requests for new courses, special wartime services, accelerated programs, and part-time employment of youth of high school age. These changes must be made in the face of the shortage of qualified teachers, a shortage particularly serious in fields closely related to the pre-induction needs.

New courses, new services, and new programs are still being added to the list of activities the schools have been asked to perform. The school administrator may ignore all these requests. He may quote some authority to the effect that the best pre-induction training will be provided if we will only do better the things we have always done in secondary schools. Or he may revise the school schedule in midterm, lengthen the school day, cooperate with community agencies, and in other ways attempt to meet at least some of the new demands.

The purpose of this article is to present (1) typical administrative difficulties which have prevented or delayed desired changes in many schools; (2) the services and resources provided by community, state, and national agencies which have encouraged and greatly facilitated these changes in school programs; and (3) the scope of local programs, together with typical scheduling practices as reported by school administrators, in selected schools in Pennsylvania.

Announcement of critical shortages in a number of occupations in the armed services and specific proposals for the introduction of five pre-induction courses reached the schools of the nation in August, 1942. The replies to a questionnaire mailed to school officials of Pennsylvania in October, 1942, revealed that some schools were already offering one or more of the courses in fundamentals of electricity, machines, shopwork, radio, and automotive mechanics. Other schools were planning to add these courses as soon

as certain difficulties had been met and certain services had been provided by state and federal agencies.

TYPICAL ADMINISTRATIVE DIFFICULTIES

The kinds of difficulties which prevented or delayed the introduction of the courses are indicated in the following replies to the questionnaire:

"How to find time for these courses without eliminating other required courses."

"Who pays for help? What certification is waived?"

"We would have to reorganize the whole curriculum here. It may be difficult to get adequate assistance in our small community."

"This is largely a business town. There is no call for these courses and no instructors."

"Our Board of School Directors is reluctant to authorize the offering of these courses during the evening because of the possibility of a fuel shortage."

"The heavy teaching load of present teachers will prevent this change. There is no provision for financial aid in adding instructors. Teachers are not trained and the staff is not large enough. We lack suitable shops and equipment. The Draft Board took our shop teacher which seriously crippled our whole program."

"Because shops are being used full-time by vocational classes, the adjustment is difficult. We have no regular vocational program in the public schools."

"Standard course and graduation requirements prevent the use of these new materials."

"We do not have the money to purchase the necessary textbooks."

"It is very difficult to set up an effective organization to do satisfactorily the many tasks we are asked to perform in addition to our regular program."

"Instructors are not equipped by training to change courses too drastically to meet wartime needs."

School administrators everywhere will recognize the foregoing as familiar problems. The list is not all-inclusive; local communities may have faced other difficulties which had to be met in providing effective pre-induction training.

PRE-INDUCTION TRAINING SERVICES OF COMMUNITY, STATE, AND FEDERAL AGENCIES

The leadership agencies directly concerned with pre-induction training are aware of the many problems with which local schools must cope. The Civilian Pre-Induction Training Branch of the War Department, in cooperation with the U. S. Office of Education, has defined the needs of the Army and has suggested ways of meeting them. In addition other agencies, as well as private concerns, have provided services and materials which aid in meeting most of the difficulties reported by local school administrators in Pennsylvania.

Instructional Materials for Pre-Induction Courses. Course outlines, in various vocational and pre-vocational fields, have been distributed to school officials throughout the nation. In cooperation with the United States Office of Education bibliographies of visual aids have been prepared. Pre-induction textbooks written especially for high school students are available from many publishers. Instructional kits for basic radio code courses have been prepared by publishers. Obsolete and sal-

vaged equipment, including airplane parts, motors, complete planes, motor vehicles, and tools, may be secured in certain instances when requests are approved by the proper authorities; the only cost is that of packing and shipping. Kits of materials dealing with all phases of pre-induction guidance, including introduction to the armed forces, have been distributed to counselors.

Approval of Courses and Emergency Certification of Teachers in the field of Pre-Induction Education.[1] At the inception of the pre-induction program, steps were taken to make available an adequate supply of teachers to meet the immediate demands of the activities included in the program. While it was realized that programs for the education of teachers in many types of activities would need to be developed to assure maximum competence in classroom instruction, provision was made through direct and immediate action of the Pennsylvania State Council of Education for the certification of teachers-in-service who, through teaching experience, had demonstrated competency in the required activities and, in addition, had had related subjects that would assure familiarity with the content of the activities.

In the field of pre-induction education, this regulation for the certification of such teachers was passed by the State Council of Education:

Where a teacher holds a valid certificate to teach science or physical science, or industrial education, or industrial arts, or mathematics, such certificate shall be valid to teach pre-induction education if, in the judgment of the local superintendent, the teacher has demonstrated competence to teach this subject.

Where a teacher is certificated in secondary subjects other than science, or physical science, or industrial education, or industrial arts, or mathematics, and demonstrates to the local superintendent competence to teach pre-induction education, such teacher may be certificated for this subject on the basis of a statement of this fact by the local superintendent to the Superintendent of Public Instruction.

This certification regulation was a direct stimulus to the employment of teachers by local districts. The usual reimbursement to school districts on the salaries of teachers so employed was predicated on the teachers holding proper certification. When school districts learned that they were to be reimbursed, they readily consented to the employment of such teachers for pre-induction courses.

The above regulation permitted the immediate introduction of the several pre-induction activities as integral parts of the school program, and, at the same time, provided an opportunity for teacher education institutions to develop both in-service programs and campus courses for teachers who might desire to complete additional work.

In-Service Training of Teachers. The liberal interpretation of certification requirements as defined above is based upon the assumption that teachers will take advantage of existing opportunities for growth in service. Many opportunities have been provided.

[1] Prepared by Dr. Henry Klonower, Director, Teacher Education and Certification, Pennsylvania Department of Public Instruction.

Tuition-free correspondence courses in the basic subject matter of physics and mathematics have been announced by the United States Office of Education. The tuition-free engineering, science, and management wartime courses were opened to teachers in a number of institutions in Pennsylvania. Tuition-free courses in aeronautics were sponsored by the Civil Aeronautics Administration. The United Air Lines provided scholarships during the summer session of 1943. Teachers enrolled, with pay, in the work-study program of the Pennsylvania School of Aeronautics, operated cooperatively by the Middletown Air Depot and the Department of Public Instruction. Regional and area conferences, visits to Army induction stations and to reception and replacement training centers, demonstrations, lectures, and discussion groups at regional meetings of the State Education Association, free courses using the Link Trainer provided by the State Aeronautics Commission—all of these in-service training devices have been utilized with very encouraging results.

To meet the situation created by the curtailment of transportation facilities, colleges and universities adopted the procedure of going to the teacher with such instructional services as the circumstances justified. Short, intensive courses for retraining were offered wherever an adequate number of teachers in service indicated a desire to complete such retraining. This was particularly true in the field of mathematics and science. High school principals urged teachers to extend the scope of their certification through the completion of such extension courses in anticipation of further curtailment of the supply of qualified teachers.

The resources described in the report of local programs which follows will indicate other possibilities for the in-service training of teachers.

THE SCOPE OF LOCAL PROGRAMS

Descriptions of typical local programs in Pennsylvania, including scheduling practices, have been made possible through the generous cooperation of the local school administrators of the districts named in the reports which follow. The reports were received early in September, 1943, in response to two questions: How do you find time for new wartime courses and activities? How has your school reorganized existing courses or activities in order to provide for pre-induction training needs? A number of reports had to be abstracted in order to present a wider range of practices.

In the *Allentown Senior High School*,[2] vocational training, part-time employment, and commercial courses are stressed as important phases of the pre-induction training program. Basic mathematics is offered on the senior level for most of the boys. Industrial arts courses provide important prevocational training for twelfth grade boys. Every senior boy spends one period per day in commando training or in other physical conditioning activities. In an intensive three-day conference boys approaching induction

[2] Reported by J. Chester Swanson, director of curriculum and research.

are instructed in procedures to be followed at induction and reception centers and in other areas in which common needs have been identified. All seniors and all boys approaching induction may drop all other courses during the last three and one-half months before induction and spend full time in war production training courses. High school credit is also granted for arithmetic review courses taught largely through individual instruction.

The *Bedford High School*[3] normally offers a complete program in mathematics and science so that the approach here is to stress the desirability of training in these fields—algebra, plane and solid geometry, plane trigonometry, chemistry, and physics. In addition to this work, the senior science classes have been converted into pre-induction training courses, offering fundamentals of electricity, machines, and radio. Two classes in arithmetic for tenth, eleventh, and twelfth grade students have been organized with maximum response. A course in pre-flight aeronautics was offered three periods per week during the past semester by a substitute instructor in vocational agriculture who was a licensed pilot. Elective courses open to boys in the tenth, eleventh, and twelfth grades are operated in fundamentals of shop work by the industrial arts department. Increased time has been provided for the physical fitness program. Emphasis is placed upon such activities as rope climbing, tumbling, pyramiding, wrestling, boxing, and calisthenics for boys. A commando course was completed on the athletic field which was in constant use during favorable weather conditions in the spring. All this work is provided in the regular class schedule.

Last semester a group of thirty-five students was organized to learn radio code. The class met each day (five days per week) with one of the science instructors from 3:30 to 4:30 in the afternoons. This group used the prepared records and course materials distributed by several of the textbook companies, and also observed the work at the Naval Training School (Radio) operating in the community.

Seniors are required to complete the Standard Red Cross course in first aid. Many underclass students also enroll in this work. Classes are arranged during school hours, in the evenings, and at noon. Evening courses for out-of-school youth are operated by the vocational agriculture, vocational home economics, and industrial arts departments. Education experience summaries are prepared and given to all seniors in accordance with the recommendation of the U. S. Office of Education, the War Department, the War Manpower Commission, and the Farm Production Administration.

The schedule of *Berwick High School*[4] includes one-half of each day devoted to pre-induction training, such as Army Clerical Procedures, P.I.T. courses, pre-flight aeronautics, mechanical drawing and layout. Military training is offered in cooperation with

[3] Reported by Eugene K. Robb, superintendent of schools.

[4] Reported by Russell A. G. Stetler, superintendent of schools.

the local guard. The experience in the VEND program and in the high school band is viewed as important pre-induction training and a number of boys have received ratings in the Army and Navy as a result of this training.

Last spring all pre-induction courses offered by the *Biglerville High School*[5] were arranged especially for the boys in the junior and senior years who were approaching draft age. Those boys who would approach draft age during the 1943-1944 school term were also permitted to take the pre-induction training courses. A special effort was made to have all boys in this latter category enroll in order that the school could go back to the regular schedule during the first semester of 1943-1944. This would permit them to receive training without maintaining a continuous program and without causing too much deviation from the regular schedule. The school will in all probability go back to the pre-induction work the second semester of the present school year in the event that the present emergency demands it.

The pre-flight aeronautics course, taught by the industrial arts teacher, was offered by reducing the number of periods required in the industrial arts program. Boys enrolled in this course were also required to carry courses in pre-induction mathematics and physics. The manuals prepared by the War Department were used in this work.

The pre-induction shop course was offered during the second semester of the last school term in lieu of the regular shop program. The physics course for pilot trainees was offered five days a week and was alternated with a course in basic mathematics. Courses in electricity and radio code were scheduled during a daily activity period. Those boys who had studied the theory of electricity in physics were permitted to take the practical theory course and will have an opportunity to complete the practical part of the program this year. Extra time in the school schedule was secured by combining English and social studies in the eleventh and twelfth grades.

In the *Lansdale High School*[6] the following pre-induction courses and activities were scheduled for all senior high school boys and girls during a war activities period: war handicraft, garment making, and aviation graphics for girls; elements of flying, science of flight, and mathematics for war workers for boys; war geography, first aid, model club, world politics, civilian defense, clerical service, and background for flight for boys and girls. Two classes in elements of flying and one class in science of flight met during another club period on Thursdays as well as Tuesdays. No credit was given for any of the work as it was purely a war activity on a voluntary basis.

Existing courses were geared to the war needs by eliminating some of the material formerly taught and introducing new units of work. For example: in physics, new units were introduced

[5] Reported by L. V. Stock, supervising principal of schools.

[6] Reported by Herman L. Bishop, principal of the senior high school.

on radio, electricity, and machines; in chemistry, on bombs, explosives, and war gases; in biology, in first aid and human anatomy. In mathematics, special emphasis was placed on aviation and war mathematics. In social studies, the issues, aims, and progress of the war, as well as maps, broadcasts, and salvage drives, were kept before the groups.

This year a greater part of the pre-induction work will be carried on through the regular classes. The students who would profit by this type of instruction and training are already taking science and mathematics courses in which the enrollment during the last year has increased to a marked degree.

In the *Lansdowne High School*[7] the changes in curricula for 1943-1944 are significant in several respects. A greater allotment of time is given to the practical arts—industrial arts and shop, foods and clothing; the pre-induction courses become an integral part of the regular school program and are offered as electives for those who have an immediate interest in the war effort; greater emphasis is given to the physical fitness program, including military drill for those who desire to elect it. All pre-induction courses are listed as electives within the minor field. Naturally, in the enrichment of the program calling for more offerings, and requiring more time, the school day has been made longer.

Eleventh and twelfth grade students may elect one of the following methods of completing minor subject requirements:

1. Elect five periods per week of minor subjects, four of which are war service courses.
2. Elect a fifth major subject approved by the adviser.
3. Elect to work fifteen hours at a regular job each week outside of school. This work must be of such nature that it is contributing to the war effort. An accounting of this work experience must be submitted each week to a designated member of the faculty.

Additional minor subjects may be elected upon recommendation of the adviser. Each student will be required to take four periods of physical education and one period of health each week.

The following minor subjects in the pre-induction field are included in the eleventh and twelfth grades for the number of periods per week indicated in parentheses: radio code (2), military drill (2), model plane building (1), blueprint reading (4), fundamentals of machines and electricity (5), fundamentals of radio (5), fundamentals of auto mechanics (5). Pre-flight Aeronautics I and Navigation I are minor subjects for boys in the eleventh year and are scheduled two periods each week. Pre-flight Aeronautics II and Navigation II are minor subjects for boys who are in the twelfth year and are scheduled for three periods each week.

In the *Manheim Township High School*[8] P.I.T. courses in electricity, fundamentals of machines, funda-

[7] Reported by Carmon Ross, acting superintendent of schools.

[8] Reported by Arthur R. Ott, principal.

mentals of radio, and fundamentals of automotive mechanics were included in the curricular offerings during the second semester of the 1942-1943 term. In addition, courses in basic mathematics, home nursing, and accelerated physical education for boys were offered as a part of the Victory Corps program. A pre-flight course in aeronautics was offered at the beginning of the 1942-1943 term. All junior and senior boys were required to schedule five periods of physical education per week.

A course entitled "Service and Occupational Guidance" was introduced to provide group guidance for students anticipating entrance into the armed services or occupations relative to war work. The course is an attempt to relieve the confusion and tension that may prevail among students at or near draft age. It is designed to help them to understand and prepare for the life that may follow induction, so that they may proceed with confidence in their ability to make the necessary adjustments. The course will cover topics relative to the selective service system, induction, divisions of the armed services and their function, organization of the services, educational and vocational opportunities while in service, requirements for admission, in-service living conditions, plans for postwar security for service men, occupational guidance for war workers, and related problems that may arise among the students.

The following served as a guide in re-vamping students' schedules to include the new courses:

1. Seniors who were enrolled in the college preparatory curriculum were not permitted to drop courses they were then pursuing.
2. Seniors who were enrolled in the general curriculum were permitted to substitute any of the P.I.T. courses for courses they were then taking. They were strongly urged to schedule the course in basic mathematics if they were not registered for another course in mathematics. The home nursing course was recommended to the girls.
3. Seniors who were enrolled in the commercial curriculum were advised to keep their program of studies intact.
4. Eleventh grade boys, whose eighteenth birthday occurred before the opening of the 1943-1944 term, were given the same latitude in electing P.I.T. courses as seniors. All other eleventh grade boys and girls kept their schedules intact.
5. Problems of democracy was made elective for pupils who had credit for two years of history in the senior high school.
6. The P.I.T. courses in electricity and fundamentals of machines were opened only to boys who were not enrolled in the traditional physics course.

Oil City[9] offers courses in pre-flight aeronautics, pre-flight mathematics, fundamentals of electricity, fundamentals of machines, radio code, and fundamentals of auto mechanics. These courses were set up just like any other course and have been placed in the regular school schedule. The only exception is auto mechanics, which is given in an eighth period immediately at the close of the school day. All junior boys who are not taking physics or industrial vocational work are re-

[9] Reported by Vaugh R. DeLong, superintendent of schools.

quired to take the courses in electricity and machines. All senior boys who are not taking secretarial work or industrial vocational courses are required to take a course in auto mechanics or radio code. It has not been necessary to operate more than one section of any of these courses except aeronautics because so many of the boys were already enrolled in subjects of a pre-induction nature. Approximately one half the boys are in the regular industrial vocational training and another one quarter take physics; consequently, only about one fourth of the boys needed to have special pre-induction classes arranged for them.

The following pre-induction program will be offered during the 1943-1944 school term in the *Warren High School:*[10]

1. All senior boys and all of the older boys in the other high school classes are given very thorough physical examinations. Those who can qualify take physical education every day, including swimming and first aid.

2. Boys with little mathematics and science, and those whose work in mathematics has been poorly done, are given intensive courses in mathematics and physics. These boys are also required to take an elective from one of the following: pre-flight aviation, electricity, auto mechanics, and radio.

3. Boys doing good work in mathematics and science in the regular academic courses have their programs disturbed very little.

4. All seniors—both boys and girls —and other boys taking pre-induction courses, are assigned to a combined English and social science course dealing with war and postwar problems.

5. Several new courses, other than those already noted, are offered as free electives. They include geography for the air age, consumer education, and blueprint reading and sketching for girls.

The *Darby High School*[11] has included the Victory Corps courses in the regular high school roster. The college preparatory courses have been modified to give special emphasis to preparation for officer training and other needs of the armed forces. Time for health and physical education has been increased to three full hours per week, with emphasis on emotional adjustment and correction of physical defects rather than on a program of strenuous conditioning exercises. In health classes emphasis is placed on proper nutrition, sex hygiene, mental hygiene, and personal relationships to help with race and nationality conflicts. The pre-flight course is organized on a three-year basis and includes courses in the tenth, eleventh, and twelfth grades. These courses have been added to the regular school curriculum, and the classes meet at regularly scheduled periods during the school day. The school day has been lengthened by two class periods per week to make this possible.

The war activities period (one hour per week) includes the following groups: aircraft drafting, advanced

[10] Reported by Floyd W. Bathurst, principal.

[11] Reported by Walter R. Douthett, superintendent.

mathematics for college preparatory students, Army club, clerical service, development of aviation, first aid, girls' Army and Navy club, Marines club, mathematics in war, model building, physical fitness, radio, seamanship, surgical dressings, war art, war geography, war handicraft, war photography.

The *Derry Township High School*[12] has organized a Victory Corps program with a full schedule of activities. Uniforms, hats, armbands, and other insignia are worn by members of the various service divisions. Physical fitness requirements include gymnasium activities, hikes, intramural athletics, swimming, or voluntary military drill activities totaling at least seven hours per week. In case of schedule conflicts certain other activities may be substituted for a part of the physical fitness program. A retired Army officer assists in the military drill program. Students in the various shops have given considerable class time to the construction of a commando course.

A number of pre-induction courses are offered on a voluntary basis. For example, last semester navigation for members of the Sea Service Division and other interested students was offered from 7:30 until 10:00 P.M. each Monday night for twelve weeks in the Community Building. Credit was given for this course. A mathematics refresher course was set up for all senior boys in the general and academic courses. Only those recommended by the mathematics instructors as competent in the fundamentals of mathematics were allowed to enter the more advanced pre-induction courses. The course was scheduled during the activity period on Tuesday and Thursday.

Students are selected for the preflight aeronautics course on the basis of ability in mathematics and flight aptitude as shown by aptitude tests. The course has been combined with the Student Civil Air Patrol activities and meets for two and one-half hours one night per week and during two activity periods per week. Hershey State Police officials provide a program in drill and military courtesy for members of the aeronautics group. Representatives from the Student Civil Air Patrol teach a composite course and supervise the work of the faculty coordinator.

Boys and girls in the general academic and commercial courses are permitted to take a course in fundamentals of machine operation. The students work on idle machines at odd times under individual instruction. A ten-week course in radio fundamentals was started for students whose work in the refresher mathematics course was satisfactory. Meeting times were set during activities periods twice a week.

Cooperating agencies include the Girl and Boy Scouts, Hi-Y and Tri-Hi-Y, the Community Clubs, the Hershey Hospital, the Red Cross, Hershey Estates, Hershey Theatre, and the various defense councils and subdivisions and committees of the Civic Club.

The *Scott Senior High School*[13] at Coatesville provides a pre-induction

[12] Reported by C. I. Kent, director of the Victory Corps.

[13] Reported by William Muthard, principal.

counseling service for all boys over seventeen years of age. Two groups meet regularly during the activities period. Films and film slides are used in these group meetings. Instruction is given in preparation for the Army tests. Pre-induction materials are used as a basis for written work and talks in English classes. Requirements for graduation specify that at least one pre-induction course be taken during the last two years in school. Physics courses give an entire semester to the study of fundamentals of electricity. Radio code practice is provided for all interested boys during an activity period. Capable pupils are then enrolled in a regularly scheduled course.

EVALUATION OF LOCAL PROGRAMS

In Pennsylvania, evaluative criteria have been prepared as a basis for studying local programs of pre-induction guidance. The Department of Public Instruction has distributed a check list to be used in determining the adequacy of certain special services which relate to the introduction of wartime courses. A number of schools have made follow-up studies of boys in the service. As a result of these studies some schools are revising their curricula to meet the specific needs suggested by service men.

The best tests of the effectiveness of local programs of pre-induction training will be found (1) in the number of young men and women who are physically, mentally, and emotionally qualified for post-induction training, and (2) in the higher levels of competency which will therefore be possible in post-induction training. The author recently read this sign over the door in one of the Army Replacement Training Centers, "Be sure that no soldier ever loses his life because you failed to train him properly." This grim reminder might well be placed in the classrooms of the nation. It suggests both the crucial importance of our training programs and the final test of their adequacy.

Recent Doctoral Studies

CUMULATIVE PUPIL RECORDS*

A PLAN FOR STAFF STUDY AND IMPROVEMENT OF CUMULATIVE PUPIL RECORDS IN SECONDARY SCHOOLS

DURING normal times there are many sound reasons why secondary schools should develop good cumulative pupil record systems. Wartime conditions have emphasized the need of having accurate and well-rounded cumulative records of student development. The armed services, employment services, war industries, and business all must obtain reliable and complete data summarizing the interests, abilities, and experience of young men and women.

Few improvements in cumulative records are possible without the cooperation of all staff members who use records. The most effective way to make staff members realize the significance of cumulative records and their positive potentialities as an aid in work with students is through participation in an examination of record problems. In many respects such an examination will amount to an evaluation of the school's educational program.

The philosophy and practice of a school are reflected in the structure and use of its pupil record system. A school's cumulative pupil record system should be examined in relation to the school's objectives and curriculum, and to the daily activities of the students and faculty. The plan of staff study presented in this project is flexible and may be adapted to the special needs of any school, large or small. It is a plan which may be carried through in a short period of time or used as the basis for a continuing study of pupil records and their use. One of its main values is as a vehicle for in-service training of teachers in guidance techniques.

In connection with the suggested plan for school staff study of cumulative records this project: (1) outlines criteria for the evaluation of a cumulative pupil record system; (2) suggests methods of using records which will increase their value as one index of student development; (3) illustrates methods through which administrators and personnel workers can cooperate with teachers in the use and improvement of the record system; and (4) considers practical matters which vitally affect the organization and use of records in large and small schools.

The success of any plan of staff study depends in large measure upon the quality of leadership provided by administrators and, in this instance, the quality of personnel workers. In the suggested plan, the functions and responsibilities of administrators and specialists are clearly delineated. The problems encountered by teachers when obtaining, recording, and using record data are carefully considered. Specific suggestions regarding the organization of a record system are also included.

In most schools the clerical burden of record maintenance falls largely upon teachers. This is one of the greatest handicaps to the development of a healthy attitude on the part of teachers toward records.

* By WENDELL C. ALLEN, ED.D. Bureau of Publications, Teachers College, Columbia University.

This burden can be greatly decreased through an efficient organization of all the mechanical aspects of record keeping. Systematic procedure in assembling and recording data will go far toward decreasing the teachers' clerical burden.

Much can be done to increase the scope and validity of record data through a straightforward and honest use of the record in work with students. Students can profit greatly from a periodic review of their school record with a counselor or teacher, providing the spirit of this review is constructive. A student's record should not be used as a club. His strengths as well as his weaknesses should appear on his record.

EMERGENT MIND AND EDUCATION*

THE influence of the late George Herbert Mead has in large part been by way of the students and colleagues who were in contact with him at the University of Chicago. Since Mead's death the University of Chicago Press has published three volumes of students' notes which have made Mead's contributions available to others. The present study represents an attempt to interpret the theory of mind found in Mead's writings and in the volumes of students' notes in a systematic form, faithful to his point of view, yet contributing to it a conciseness and an organization which are not immediately apparent in these records of Mead's thinking.

The study accordingly begins with a description of the method which is basic to Mead's thought. The research attitude of the modern scientist is seen as more adequate than the method of Aristotelian science on the one hand and the positivistic position on the other. Mead's loyalty to this method and his wholehearted acceptance of the theory of organic evolution, which he considers the method to have established, lead him to a theory of mind as emergent within the adjustment process of organic nature. Such a view is seen as desirable because it avoids, on one hand, the dualistic presupposition involved in the psychologies and social psychologies of the last century and, on the other, the mechanicalism of extreme behaviorism.

According to Mead's hypothesis, the emergence of reflective intelligence out of the behavior of the biological organism is marked by the ability of the human individual to take the attitude of the other through the use of the significant symbol, and in so doing to arrive at cognitive meanings and the consciousness of himself as an object. Such a reconstruction of our beliefs about mind is fruitful because it enables us to explain how we convert events into objects of knowledge, how we arrive at and use universals, how the reconstruction of society and the realization of individuality are concomitants, and how democracy is the optimum state of human welfare.

The study attempts to show how these issues are related to some of the significant educational problems of our time. It suggests that many of our educational procedures, psychologies, and outlooks have implicit within them dualistic presuppositions or an intellectualistic view of learning which presupposes an individual mind assimilating an academic or formal subject matter isolated from the inclusive context of experience. It also suggests that education, in its reaction against such views, has sometimes gone so far as to accept any kind of pupil activity as meaningful growth, or to identify freedom with the lack of compulsion, or to accept the immediate and unconditioned needs and interests of the child as the adequate grounds for educa-

* By ALFRED STAFFORD CLAYTON, PH.D. Teachers College, Columbia University, Contributions to Education, No. 867.

tional experiences. The study represents an effort to bring to bear Mead's bio-social behaviorism on the problematic areas created by these opposing views so that a view of mind as emergent may be shown to make an operational difference in educational affairs.

Professor Dewey's remarks on the significance of Mead's thought are a tribute with which the author of this study would like to concur. "His mind was deeply original. . . . He had early in life an intuition, an insight in advance of his day. . . . His mind was germinative and seminal."

COMPLEXITY OF MENTAL PROCESSES IN SCIENCE TESTING*

THE items of an objective test vary in complexity; that is, they vary in their demands for mental activity upon the part of the students taking the test. Some items may involve the recall of but a single unit of information; others may demand a recall and an interrelating of a number of informational details. Can this complexity, as a characteristic of items, be reliably assessed? Can it be distinguished from item difficulty? Are the more complex items better measures of achievement? Of mental ability? Are tests composed of the more complex items and tests composed of the less complex items equivalent measures of achievement? Of mental ability?

PROCEDURE

The investigation described in the present study was limited to the Cooperative General Science Test, for College Students, Form 1937. This test was used in a general testing program for college sophomores. It was not used as a final examination for a specific course or as a measure of progress from a previously determined level. As a first step, the test items were rated on a five-point scale of complexity by five "experts" in the field of science education. The reliability of the judgments of complexity values thus obtained was $r = .92$. The judges were well able to distinguish between item complexity and item difficulty. However, college sophomores of both high and low ability were considerably less reliable judges of complexity and tended to confuse complexity with difficulty.

Testing results from the use of the science test and the American Council Psychological Examination, which served as a criterion of mental ability, were obtained for more than 900 college sophomores in six colleges and universities. From these, two statistically equivalent samples of 400 cases each were compiled. With one of these samples of 400 cases a double item analysis of the science test was made, using the science score and the psychological score as criteria. When intercorrelations of the various item characteristics thus quantified were obtained it was found that the complexity of the science test items, as judged by experts, bears no significant relationship to the validity of the items as measures of mental ability. The slight positive relationship to the validity of the items as measures of science achievement is not statistically significant.

On the basis of their complexity values the science test items were distributed into a series of five subtests of varying levels of average complexity, from the least complex to the most complex. The second sample of 400 returns from college sophomores was scored for each of the five subtests. From these scores the reliabilities of the subtests

* By FREDERICK THOMAS HOWARD, PH.D. Teachers College, Columbia University, Contributions to Education, No. 879.

and the intercorrelations among the subtests, total science test, and the psychological examinations were obtained. The subtests of average or slightly less than average complexity were found to be the most reliable.

The matrix of intercorrelations among the subtests, total science test, and the psychological examination was analyzed by use of Hotelling's method of "principal components." This factor analysis of the data revealed two factors which accounted for approximately 90 per cent of the variance therein. The first and by far the largest factor identified with the total science test was labelled "science achievement." The second was identified as an intellectual factor involved in the psychological examination. The factor loadings of the five subtests for each of these two factors did not differ sufficiently to deny the equivalence of the subtests as measures of science achievement or as measures of mental ability, as these factors have here been determined.

FINDINGS

It has been found that items of objective tests of the type used in this study can be reliably rated with respect to their complexity by judges well trained in the subject matter involved. Complexity of items as here determined was found to be independent of item difficulty. However, students were less reliable judges and tended to confuse complexity with difficulty. The more complex items, by expert judgment, were neither more nor less valid measures of achievement or of mental ability than were the least complex items. It cannot be said that the more complex items of objective tests of this type are measures of mental ability rather than of achievement.

When the test items were divided into subtests of various ranges of average item complexity and these subtests were administered to a new but comparable population, the results supported the findings from the above analysis of item characteristics. Approximately 90 per cent of the variance found in the subtest scores can be attributed to a large factor, "science achievement," and a smaller "intellectual factor." The equivalence of the subtests as measures of these two factors is not denied by the obtained data. Items of average complexity do appear, however, to make the most reliable tests.

To the extent that the more complex items are measures of the ability to recall, to relate, and to apply information while the least complex items are but measures of the ability to recall, the findings of this study have bearing on the larger problem of the differential measurement of the so-called higher and lower mental processes. In these data one can find little evidence of the differential measurement of mental processes. As here measured, organizing ability in a field of knowledge appears to be indistinguishable from extent of information in that field. There is little in these data to support either an assertion that the schools (as used in this study) are training a group of fact-getters who are unable to use the facts, or any contention that schools should emphasize mental-training warp without regard to the informational woof.

Departmental Notes

Institute of Adult Education

Mr. Glen Burch, formerly of Oakland, Calif., and Astoria, Ore., has been appointed Associate in Adult Education and Editor of Publications in the Institute of Adult Education for the current year, succeeding Miss Dorothy Rowden, who recently joined the staff of the Educational Department of the Columbia Broadcasting System. Mr. Burch comes from the librarianship of the Clatsop County Library, and before holding that position he was a member of the staff of the Oakland Public Library. He has been active in community adult education work as president of the East Bay Adult Education Council and Chairman of the Clatsop County Community Council.

Division I

Foundations of Education

SOCIAL AND PHILOSOPHICAL FOUNDATIONS

Professor Edmund deS. Brunner attended a meeting of the National Advisory Committee on the Victory Farm Volunteers in Washington, D. C., on November 3. The next day he talked to the state and field staff of the Extension Service of Ohio State College of Agriculture and worked with several of their conference groups.

PSYCHOLOGICAL FOUNDATIONS AND EDUCATIONAL RESEARCH

The Pi Lambda Theta Committee on Studies and Awards, of which Professor Helen M. Walker is a member, announces two awards of $400 each to be granted on or before September 15, 1944, for significant studies in education. An unpublished study on any aspect of the professional problems of women may be submitted by any individual, whether or not a member of Pi Lambda Theta and whether or not engaged at present in educational work, or by any chapter or group of members of Pi Lambda Theta. Three copies of the final report of the completed research study must be submitted to the Committee on Studies and Awards by August 1, 1944. All requests for further information should be addressed to the chairman of the Committee, Professor May Seagoe, University of California, Los Angeles.

Division II

Organization and Administration of Education

The first meeting of the Administration Club for this semester was held November 12 in the Grace Dodge Room of Teachers College. Professors John K. Norton, Paul R. Mort, Willard S. Elsbree, and Henry H. Linn participated in a short discussion on the topic, "Educational Administration Today at Teachers College and Elsewhere." Present and former members of the Club are invited to attend all future meetings.

Professor Norton attended the twenty-third meeting of the Educational Policies Commission held at the Hotel New Yorker November 4 to 7 inclusive.

The Thomas H. Briggs Secondary School

Group held the first of five meetings for 1943-44 at the Men's Faculty Club on October 25. Dr. James S. Plant, well-known psychiatrist and director of the Essex County Juvenile Clinic, Newark, N. J., spoke on the general problem of the impact of the war on adolescents. Dr. Galen Jones presided in the absence of Professor Will French, who continues as factotum of the group. The next meeting will be held December 13.

THE second of the Forums on Current Problems in Administration was held November 5 in the Grace Dodge Room of Teachers College. Under the chairmanship of Professor George S. Counts, and with Mr. Hall Bartlett, Professor Harold Rugg, Dr. V. T. Thayer, and Dr. Fred D. Wish as consultants, a very active and interesting discussion developed on the topic, "The Impact of the War on the Social Studies." Approximately one hundred superintendents and other administrative officials participated. For information regarding future forums address Professor W. S. Elsbree, Teachers College.

PROFESSOR E. S. Evenden attended a meeting of the Committee on Standards and Surveys of the American Association of Teachers Colleges held at the State Teachers College, Trenton, N. J., November 3 and 4. Other members of the committee are President A. L. Rowland, State Teachers College, Shippensburg, Pa. (chairman), President Paul Sangren, Western College of Education, Kalamazoo, Mich., President William H. Vaughn, State Teachers College, Morehead, Ky., and President Walter E. Hager, Wilson Teachers College, Washington, D. C. Also in attendance at the meeting were President R. L. West, State Teachers College, Trenton, N. J., who is president of the American Association of Teachers Colleges, and President Charles W. Hunt, State Teachers College, Oneonta, N. Y., who is secretary-treasurer of the Association.

Division III
Guidance

PROFESSOR Ruth Strang served as chairman of the general meeting of the New York State Association of Deans and other Guidance Personnel held on November 6. The topic for discussion was "The Community Task of the Schools." On November 19 Professor Strang participated in the work-meeting of the Council of Guidance and Personnel Associations as representative of the Alliance for Guidance of Rural Youth.

PROFESSOR P. M. Symonds contributed entries on aggression, frustration, acceptance, rejection, and parent-child relations to the new *Encyclopedia of Child Guidance*, which is published by the Philosophical Library, Inc.

ON October 16 Professor Harry D. Kitson entertained the students in Vocational Guidance and Occupational Adjustment at tea in the Grace Dodge Room. Plans were made for the year's work of the departmental club, which is a branch of the National Vocational Guidance Association. Officers were elected as follows: president, Victor Ales; secretary and treasurer, Kathryn Lenertz; representative on Student Council, Beulah Winston. Among the guests was Miss Christine Melcher, executive secretary of the National Vocational Guidance Association. The next meeting of the Teachers College Branch will be held jointly with other branches in this area, at which time the officers of the National Association will be present.

MRS. Goldie R. Kaback is engaged in demonstrating the Rorschach Group Method before local professional groups, and investigating its use in personnel selection. She has addressed several large groups of accountants and pharmacists on the use of psychological procedures in recruiting men for their professions, and has collected the

Rorschach records from the members attending these meetings.

SEVERAL advanced students in Vocational Guidance are serving as volunteers in the local office of the Re-employment Division of Selective Service—the agency set up to interview discharged service men regarding their return to occupational life.

Division IV

Instruction

CURRICULUM AND TEACHING

PROFESSOR H. L. Caswell spoke before two groups at a meeting of the New Hampshire Teachers' Association which was held in Keene on November 12. His topics were "Effects of the War Upon Schools" and "Major Issues in Elementary Education."

Professor Caswell attended a special township institute at Upper Darby, Pa., on November 24. He addressed the teachers on "Curriculum Adjustments Made Necessary by the War," and a group of supervisors on "Supervisory Techniques."

PROFESSOR Jean Betzner attended the Community Convention of the St. Louis Association for Childhood Education which was held on November 3. She discussed "The Place of the Teacher in Wartime." Four hundred and fifty members of the St. Louis Association were present as well as members from LaDue, Webster Grove, Kansas City, University City, Clayton, Maryville, and other near-by communities.

MEMBERS of Professor Betzner's class in Children's Literature prepared an exhibit of selected lists of books for a school library collection for the November meeting of the New Jersey Association for Childhood Education, which was held at the Hotel Pennsylvania in New York City on November 12.

PROFESSOR William B. Featherstone, on leave from Teachers College for the duration, has attained the rank of Major and is acting in the capacity of assistant secretary at the School of Military Government, Charlottesville, Va.

THE Elementary Club holds a weekly meeting and tea on Tuesdays from three-thirty to four-thirty. The officers for the current semester are: president, Miss Ruth MacWhorter; secretary, Miss Deborah Partridge; and treasurer, Miss Virginia Somerby. Recent speakers at the meetings have been Miss Bernice Magnee, instructor in the department of Fine and Industrial Arts; Mr. Cecil Rice, a high school principal from the Canal Zone who is studying at Teachers College; and Miss Christine Gilbert, a member of the Library staff of Teachers College.

PROFESSOR Ernest G. Osborne is now spending half his time as executive secretary of the New York Educational Projects, Inc., which is being conducted under the joint auspices of the New York Foundation and the New York City Board of Education. The project includes the development of educational, clinical, and recreational programs in two junior high schools and one elementary school in the high-delinquency area of Harlem. Professor Osborne acted as director of study groups at the biennial conference of the National Association of Nursery Education, which was held in Boston, Mass., October 21 to 25.

SOCIAL SCIENCE

ON October 13 Professor George T. Renner delivered the opening address of the 1943-44 series of lectures presented by the Council on Foreign Affairs of Cleveland, Ohio. His subject was "The Geographic Pattern of the War."

THE OWI has requested permission to reprint and circulate throughout the United Nations an article by Professor Renner

entitled "How the United Nations Must Police the World," which appeared in the September issue of *The American Magazine*.

PROFESSOR Mary E. Townsend addressed the history department of Wellesley College on October 27. Her topic was "The Colonial Problem in the War and in the Peace."

NATURAL SCIENCES

A SPECIAL meeting of the Board of Directors of Science Education, Incorporated, the organization that publishes *Science Education*, was held at Teachers College on October 22 and 23. At this meeting the reorganization of the editorial policies of the magazine was discussed and furthered. Those in attendance were Professor Florence Billig of Wayne University, Professor Clarence Pruitt of Oklahoma Agricultural and Mechanical College, Mr. W. G. Whitman, State Teachers College, Salem, Mass., Professors Charles Pieper and M. L. Robertson of New York University, and Professors Gerald S. Craig and S. Ralph Powers of Teachers College.

MR. Charles K. Arey, who was formerly an assistant in the department of Natural Sciences of Teachers College, is now instructor in science in the School of Education, Ohio State University.

SPEECH

PROFESSOR Magdalene Kramer spoke on the topic, "Speech in Teacher Education" at the meeting of the Western Pennsylvania Education Conference in Pittsburgh on October 22. She also spoke to the Teachers Association of Rahway, N. J., on November 4. Her topic was "Oral Communication in Modern Education."

HOME ECONOMICS

PROFESSOR Helen Judy Bond represented the department of Home Economics at the meeting of the Association of Land-Grant Colleges and Universities which was held at Chicago October 22 to 26. She was a guest of the Grocery Manufacturers of America at the luncheon held at the Waldorf Astoria November 4 for the presentation of the Ninth Annual GMA Scientific Award. Sir John Boyd Orr, director of Rowett Research Institute, Aberdeen, Scotland, was the recipient. This award was granted Dr. Henry C. Sherman in 1937 and to the late Dr. Mary Swartz Rose in 1939.

PROFESSOR Bond has been appointed a member of the Advisory Board of the Committee for the Care of Young Children in Wartime.

PROFESSOR Mary DeGarmo Bryan and Miss Orpha Mae Huffman attended the meeting of the Society for the Advancement of Management in Philadelphia on October 15 and 16, and the meeting of the American Dietetic Association in Pittsburgh, Pa., October 21 to 24. Following the latter, Professor Bryan also attended the meeting of the Food Service Directors Conference in Pittsburgh. She is wartime adviser to the Conference.

ON October 12 Professor Grace MacLeod spoke over station WNYC on the topic, "What to Eat and Why." The broadcast was one of a series on "Mealtime in Wartime" sponsored by the radio committee of the New York City Food and Nutrition Program.

MISS Alta Atkinson attended the meeting of the National Restaurant Association held in Cleveland October 18 and 19.

ON October 21 Professor Clara Taylor addressed a group of Home Economics teachers on the subject, "Our Major Nutrition Problems." The lecture was one of a series in an alertness course on consumer education which is sponsored by the Manhattan Civilian Defense Volunteer Office and held

at the American Museum of Natural History. On October 25 Professor Taylor spoke at a meeting of the Bronx Council of Social Agencies held at the Tremont Health Station on the topic, "War Nutrition."

BUSINESS EDUCATION

PROFESSOR H. L. Forkner participated in a conference held at the Woman's College, University of North Carolina, Greensboro, on November 12. Problems of postwar business education were considered.

AT the meeting of the National Business Teachers Association in Chicago on December 29, a breakfast will be held for former and present students of business education of Teachers College. Professor Forkner and Dr. Thelma Potter will tell the alumni about new activities at the College, such as the various service centers and the curriculum study projects.

As a member of the Legislative Committee of the American Vocational Association, Professor Forkner attended a conference in Washington dealing with legislative problems on the national and state level. He also attended a conference at which Colonel Spaulding presented the General Osborne report on "Postwar Education of the Returning Veteran." As president of the National Council for Business Education, Professor Forkner will attend a Board meeting in Detroit December 30, at which time plans for postwar business education will be discussed and the plan for a unified organization of business teachers will be reviewed.

DR. Potter, chairman of the National Council for Business Education Typewriting Test Committee, has recently completed the 1943-44 series of tests which are now on the market and being distributed by the Science Research Associates of Chicago.

PROFESSOR Forkner recently completed a survey of stenographers and their employers in which he secured information on the rates of dictation and the satisfaction of employers with regard to the stenographic service. A complete report will be published soon.

AN article by Professor Forkner entitled "When and If They Come Home" appears in the November issue of *The Business Education World.*

MUSIC EDUCATION

PROFESSOR Lilla Belle Pitts gave a series of lectures under the auspices of the Los Angeles County Board of Education between November 13 and 20. The engagement called for addresses before all teachers in the various school areas as well as before smaller groups of music teachers. Professor Pitts spent November 22 and 23 in a meeting with the division of Elementary Education of the State of Utah. The topic for discussion at this conference was "The Place of Music in the General School Program."

ON October 25 and 26 Professor Harry R. Wilson conducted the music sessions of the Delaware County Teachers Institute in Media, Pa. He gave the following lectures and demonstrations: "How Music Can Contribute to the War Effort"; "Values and Procedures in Assembly Singing"; "How Music Education Can Contribute to the Democratic Way of Life"; and "The Development of Singing Voices for Individual and Choral Expression." On October 28 Professor Wilson spoke at the annual meeting of the Rhode Island Music Educators Association in Providence. The title of his talk was "Community Leadership in Music Education."

PROFESSOR Norval L. Church has been appointed a member of the Committee on Conducting of the Music Educators National Conference.

A PHOTOGRAPH and description of the Conducting class of the 1943 Teachers College Summer Session appeared in the November issue of *The American Magazine* in the "Interesting People" section.

THE Riverside Symphony Orchestra resumed rehearsals on November 3, with Professor Church as conductor.

HEALTH AND PHYSICAL EDUCATION

PROFESSOR William L. Hughes spoke to a group of teachers at Charlotte, N. C., on October 25 and another group at Roanoke, Va., November 13. His topic was "Physical Fitness for War and Peace."

Office of Field Relations and Placement*

The following recent appointments of Teachers College Alumni are reported by the Office of Field Relations and Placement:

Adams, Effie K., teacher of first grade, The Modern School, New York, N. Y.

Alexander, Charlotte White (B.S. 1942), teacher of sixth grade, Brooklyn Friends School, Brooklyn, N. Y.

Angle, Oakie (B.S. 1929), supervisor of elementary grades, Elmore County Schools, Wetumpka, Ala.

Armstrong, Leland R. (A.M. 1936), business manager, Public Schools, Wichita, Kan.

Ash, Nila La Verne, teacher of English and physical education, High School, Harpers Ferry, W. Va.

Avlon, Don (A.M. 1942), supervisor of music, Lyman Hall High School, Wallingford, Conn.

Baker, Janet Hudson, librarian, High School, High Bridge, N. J.

Bass, Anne L. (A.M. 1936), dietitian, Home for the Aged and Infirm, New York, N. Y.

Bean, Rachel C. (A.M. 1942), teacher of special classes, Main Street School, Tuckahoe, N. Y.

Bear, Jennie R. (A.M. 1921), housemother, Masonic Home of Missouri, St. Louis, Mo.

Boger, Camille Claywell (A.M. 1941), teacher of special classes, Public Schools, Kannapolis, N. C.

Bressi, Elizabeth (A.M. 1940), nursery school teacher, Child Service Center, Kaiser Company, Portland, Ore.

Bruggeman, Jeanne A. (A.M. 1943), teacher of home economics, High School, Beacon, N. Y.

Brumbaugh, Sara Barbara (A.M. 1921), teacher of physics, High School, Bladensburg, Md.

Burbeck, Louise G. (A. M. 1929), instructor in physical education, Skidmore College, Saratoga Springs, N. Y.

Bush, Lucile (A.M. 1940), director, Child Care Center, Meadville, Pa.

Calderon, Helen Delehanty (B.S. 1933), teacher of first grade, Munsey Park School, Manhasset, N. Y.

Call, Esther B., head of home economics department, Morehead State Teachers College, Morehead, Ky.

Carney, Grace M. (A.M. 1929), director of nursery school, Chicago Commons, Chicago, Ill.

Carpenter, Helen McCracken (Ed.D. 1942), assistant professor of history and political science, Rhode Island State College, Kingston, R. I.

Cederholm, Ernestine (B.S. 1940), teacher of third grade, Public School, Nyack, N. Y.

Ciricillo, Pasquale R., instructor in music, Rockland County Schools, N. Y.

Clisby, Charles E., instructor in history, Trinity School, New York, N. Y.

Cole, Anna A. (A.M. 1941), assistant county home demonstration agent, New Hartford, N. Y.

Cowley, Ruth M., field adviser, Girl Scouts, Inc., New York, N. Y.

Curfman, Lulu Mae, dean of women, Central College, Fayette, Mo.

Cushing, Margaret E., nursery school teacher, Gramercy Park School, New York, N. Y.

Cutler, Ethel R. (A.M. 1937), instructor in

*Any student who is taking or has taken twelve points of work at Teachers College or any graduate of Teachers College may register with the Office of Field Relations and Placement. For initial registrations covering three years, no fee is charged. For information write to the Placement Office for its booklet, *Employment of Teachers and Administrators.*

art, Woman's College, University of North Carolina, Greensboro, N. C.

Davis, Marylyn Powel, librarian, High School, East Rutherford, N. J.

Dear, Adelaide (A.M. 1936), field representative, Child Care Center, Trenton, N. J.

De Haan, Margaret (A. M. 1939), instructor in physical education, Brooklyn College, Brooklyn, N. Y.

Denneen, Barbara Anne, teacher of Latin and English, Central School, Goshen, N. Y.

Dericks, Virginia C. (B.S. 1943), supervisor of medical and surgical teaching, Mountainside Hospital School of Nursing, Montclair, N. J.

Desvernine, Madeline, teacher of French and Spanish, Warrenton Country School, Warrenton, Va.

Doerr, Esther J., teacher of social studies, High School, Woodstown, N. J.

Drew, Eric (A.M. 1940), teacher of science, Gardiner School, Tuxedo Park, N. Y.

England, Edwin F., teacher of eighth grade, Public Schools, Bronxville, N. Y.

Evans, Gertrude C. (A.M. 1921), teacher of English, High School, North Plainfield, N. J.

Evarts, Morley K. (A.M. 1931), supervising principal, Seward Institute, Florida, N. Y.

Finger, Bernice R. (A.M. 1937), associate professor of physical education, Alabama College, Montevallo, Ala.

Fletcher, Ervin (A.M. 1934), principal, High School, Port Jervis, N. Y.

Freund, E. Edith, director of physical education, Public Schools, Bellmore, N. Y.

Gallanter, Justin, teacher of science, Public Schools, Nyack, N. Y.

Gardiner, Marian J. (A.M. 1934), dean of women, and instructor in home economics, State College, Dover, Del.

Gardner, Emma W., assistant professor of household science, Oklahoma A. & M. College, Stillwater, Okla.

Gehri, Lillian (A.M. 1934), supervisor, Bureau of Child Development and Parent Education, University of the State of New York, Albany, N. Y.

Geiger, Grace, teacher of English and social studies, Edgemont School, Scarsdale, N. Y.

Geiger, Ruth Anne (B.S. 1943), head nursery school teacher, YMHA, New York, N. Y.

Gill, Zitman O. (A.M. 1943), instructor in English, Southern University, Scotlandville, La.

Given, Elizabeth (B.S. 1921), dietitian, Riverdale Country School for Girls, Riverdale, N. Y.

Glanz, Selma, teacher of French and German, Riverdale Country Day School, Riverdale, N. Y.

Guaccero, I. Vincent (A.M. 1940), head of art department, Endicott Junior College, Beverly, Mass.

Guillaume, Harry G. (A.M. 1939), teacher of industrial arts, Public Schools, Great Neck, N. Y.

Hall, Harriet, kindergarten teacher, Gramercy Park School, New York, N. Y.

Hall-Quest, Olga W. (B.S. 1933), teacher of remedial reading, Masters School, Dobbs Ferry, N. Y.

Harden, Mary (A.M. 1929), supervisor of instruction, Public Schools, Wayne, Mich.

Helm, Erasmus, grade school teacher, Malcolm Gordon School, Garrison, N. Y.

Helme, Dorothy E. (B.S. 1936), teacher of sixth grade, Rye Country Day School, Rye, N. Y.

Hemmingson, Coral, supervisor of physical education, Public Schools, Janesville, Wis.

Hildenbrand, Grace (A.M. 1943), kindergarten teacher, Greenburgh School No. 1, White Plains, N. Y.

Hoag, Frances Livingston (A.M. 1936), supervisor of school lunch program, Department of Public Instruction, Harrisburg, Pa.

Hofman, Frieda, relief worker, Woman's Medical College Hospital, Philadelphia, Pa.

Hudson, Nancy, instructor in geology and geography, Carleton College, Northfield, Minn.

Huntley, Velma F. (A.M. 1937), teacher of science and mathematics, State Teachers College, New Paltz, N. Y.

Huth, Mari Luise (A.M. 1935), assistant professor of modern languages, Coker College, Hartsville, S. C.

Hyrkin, Adele M. (A.M. 1943), teacher of English, The Lear School, Miami Beach, Fla.

Jacobs, Agnes Perkins, teacher of fifth grade, Montclair Academy, Montclair, N. J.

Jansen, Mary Louise, instructor in history, Hobart College, Geneva, N. Y.

Johnson, Florence E. (A.M. 1935), teacher of first grade, Franklin School, Stratford, Conn.

Johnston, Betty (A.M. 1942), teacher of English, Central School, Spencer, N. Y.

Kozich, Bertha (A.M. 1942), nursery school teacher, Payne Whitney Nursery School, New York, N. Y.

Kunkel, Florence May, teacher of mathematics, State Teachers College, Slippery Rock, Pa.

Lalley, Ernest J. (B.S. 1936), director of athletics, North High School, Binghamton, N. Y.

Lane, Ellen M. (A.M. 1930), director of religious education, First Congregational Church, Binghamton, N. Y.

Leonard, Mary Josephine (A.M. 1937), teacher of mathematics, High School, Fort Madison, Iowa.

Levendusky, Eleanore Mary (A.M. 1940), teacher of mathematics, High School, Fair Lawn, N. J.

Lewis, Florence Black (A.M. 1940), teacher of second grade, Ethical Culture School, New York, N. Y.

Linden, Eloise P., kindergarten teacher, Vincent Smith School, Port Washington, N. Y.

Lippert, Gertrude (A.M. 1932), head of home economics department, Georgetown College, Georgetown, Ky.

Llewellyn, Ardelle Alice (A.M. 1943), teacher of elementary grades, New York State Training School for Girls, Hudson, N. Y.

Loud, Oliver S. (Ed.D. 1943), assistant professor of physical science, Antioch College, Yellow Springs, Ohio.

Lundin, Mabel V. (A.M. 1935), principal, Tarrytown School, Tarrytown, N. Y.

Maloney, Evelyn Laura (A.M. 1940), teacher of social studies, Highland Park High School, New Brunswick, N. J.

Marchetta, Grace M. (A.M. 1941), teacher of third grade, Public School No. 1, Baldwin, N. Y.

Mardirossian, Eleanor Kazanjian (A.M. 1941), teacher of third grade, Westwood, N. J.

Meadows, Lida Elizabeth (A.M. 1943), teacher of mathematics, Mercer University, Macon, Ga.

Menne, Ida L. (A.M. 1943), teacher of physical education, High School, Hastings, N. Y.

Milians, Shepard (B.S. 1943), teacher of fourth grade, Central School, Long Beach, N. Y.

Miller, Marjorie Belle (A.M. 1941), instructor in arts and crafts, Plandome Road School, Manhasset, N. Y.

Miller, Mary Alice (A.M. 1933), librarian, High School, Ilion, N. Y.

Novy, Elsie Lois, teacher of first grade, Pine Valley School, Oak Ridge, Tenn.

Palmer, Eleanor S., teacher of third and fourth grades, Grace Church School, New York, N. Y.

Pelton, Doris L., librarian, Central School, Wappingers Falls, N. Y.

Pennock, Grace L., associate home demonstration agent, Middlesex County Extension Service, Concord, Mass.

Pleister, Evelyn (A.M. 1938), teacher of special classes, Public Schools, Garfield, N. J.

Podlesny, H. Henriette (A.M. 1943), instructor in music, High School, Zelienople, Pa.

Post, Thelma F. (A.M. 1941), assistant dietitian, L. Bamberger & Company, Newark, N. J.

Prakken, Donald W., instructor in Greek and Latin, Indiana University, Bloomington, Ind.

Projansky, Edith, teacher of social studies, High School, Hudson, N. Y.

Pyde, Frieda H. (B.S. 1943), teacher of seventh grade, South Salem School, South Salem, N. Y.

Ramsden, Ethel J., instructor in biology, Teachers College, Montclair, N. J.

Ray, Vera Cole (A.M. 1935), teacher of mathematics, University of Tennessee, Knoxville, Tenn.

Redding, Ruth (A.M. 1936), teacher of Spanish and German, High School, Bloomfield, N. J.

Reynolds, Robert P. (A.M. 1943), teacher of social studies, Public Schools, Port Washington, N. Y.

Reid, Clara Spurlock, instructor in foods and nutrition, North Carolina State College for Negroes, Durham, N. C.

Rich, Ruth Ainssough, instructor in mathematics, Rutgers University, New Brunswick, N. J.

Richardson, Herman H. (A.M. 1934), superintendent of schools, Hartford, Vt.

Rippel, Louise (A.M. 1940), instructor in physical education, High School, Port Chester, N. Y.